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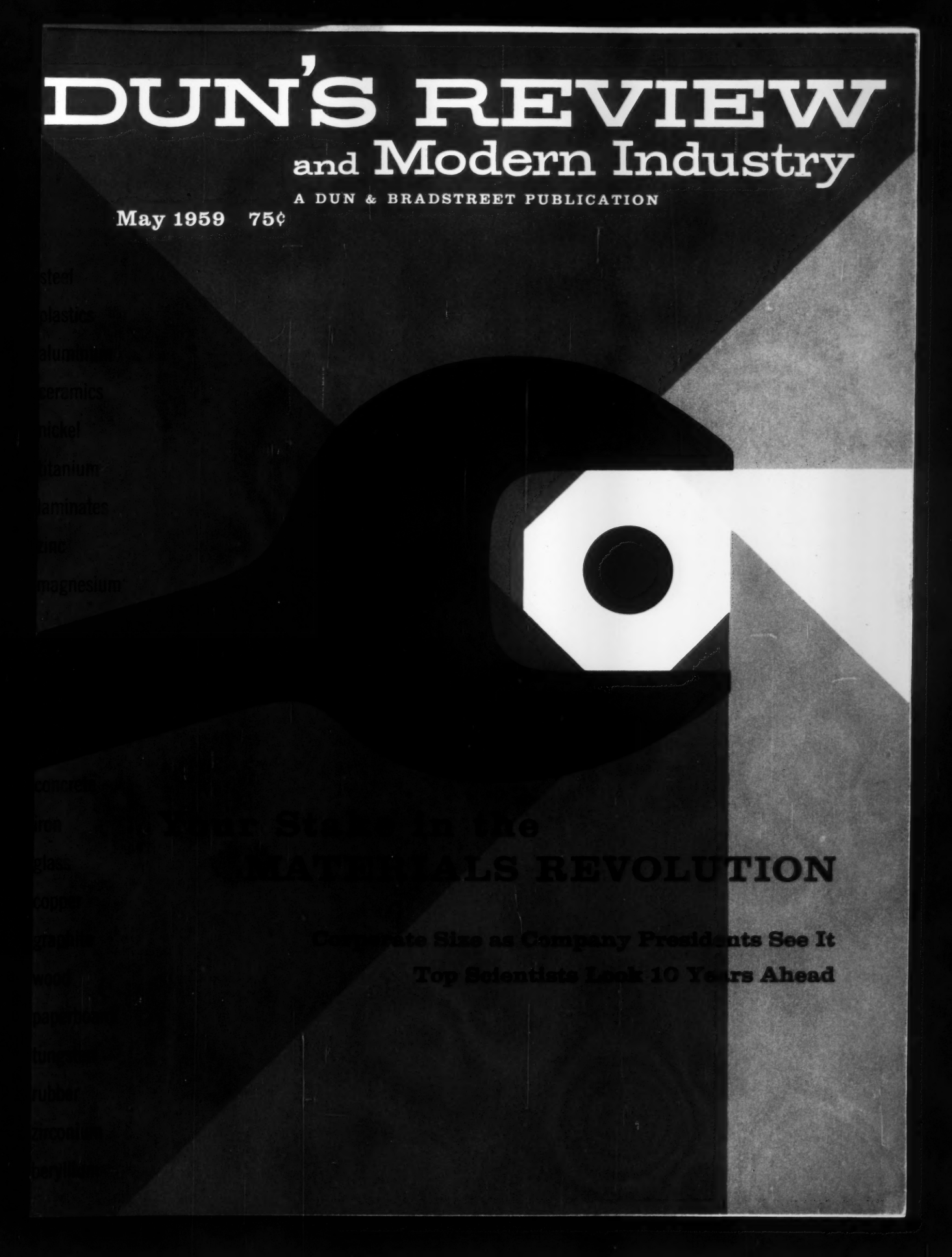

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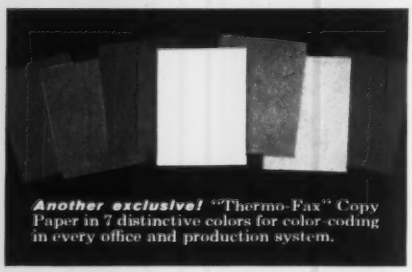

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DUN'S REVIEW and Modern Industry

Vol. 73
No. 5

May 1959

Your Stake in the Materials Revolution ..... *Melvin Mandell* **47**

Corporate Size as Company Presidents See It ..... *Kenneth Henry* **51**

When Should You Make It Yourself? ..... *Roy Chapin, Jr.* **54**

Top Scientists Look 10 Years Ahead **56**

Equity Financing for Smaller Businesses ..... *H. Stanley Krusen* **59**

The Growing Challenge of Foreign Competition ..... *A Top Management Interview* **62**

Industrial Boom in Gunpowder **83**

Group Decision Making: Pro and Con **96**

Turning Back the Clock **101**

Executive Bonuses Take a Slide **105**

Management Odyssey with a Practical Payoff **115**

Industrial Relations, 1959: A Progress Report **123**

How Companies Are Paying for New Plants **125**

Monthly Features

Editorial: *Off Limits for Automation* **3**
In the age of the computer, there's still scope for human values.

The Trend of Business **5**
Economy may lose some steam in the Summer months, pick up in the Fall.

Business Failures **19**
Casualties up moderately in both number and size during month of March.

Washington Business Front **23**
Administration economists eye price patterns with cautious optimism.

Voice of Industry **29**
How management can tackle the employment problems of automation.

Ideas at Work **74**
Creative management approaches to common problems in capsule case histories.

Inside Industry **79**
"Something in the air" may prove effective for pepping up production workers.

Sales & Distribution **91**
How a top manufacturer generates new customers for a major product.

Executive Bookshelf **107**
Descriptive notes on five new books of interest to business men.

Capital Views & Previews **111**
A top Congressional tax expert pinpoints some flaws in Federal tax structure.

New Product Parade **118**
Latest equipment and materials for industry's use in office and shop.

The Reviewing Stand **130**
Previews of features to come, plus philosophic side views on the business scene.

M. H. Booth, Assistant Traffic Manager, Denver, Colorado

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Editorial

Off Limits for Automation

AUTOMATIC office equipment is reducing statistical drudgery and eliminating excessive paperwork. These are virtues which can be converted into dollars-and-cents savings to management in materials, office space, and white collar labor. But let's not overdo it.

A machine is an inanimate object, a mere storage house of data. It cannot handle human equations. Automation is no substitute for the psychologist, for while it can develop patterns in mass statistics of behavior, it cannot supplant the judgment of the individual.

Let's take a look at what's happening in many offices where the streamlining of sales, accounting, credit, and personnel records requires some detailed experience of human nature—the attitudes, whims, talents, habits, and other indicators of character and stamina under stress that cannot be reduced to formula or be appraised by pushing a button or lever.

There's no sentiment in a machine, no matter how ornery it may act at times. Customers have sentiments. So have salesmen. And sentiment can be expressed in the profit and loss statement because it reflects good will. When automation takes the ledger away from the bookkeeper and the individual purchase and payment record away from sales and credit managers, it blanks out a valuable window on the marketplace.

Automation, assembly lines, mass production, and consumer self-service are a part of the world we live in. We ought to use every short-cut to management efficiency—up to that point where physical and precision savings are offset by the losses in human and individual values. When customers become mere numbers and their purchases are lost in the oblivion of weekly or monthly totals, it is time to reconsider the purpose of trade and the measure of its compensations.

Naturally, there are many items of low cost and high volume for which advertising provides the contact and the impluse to purchase. However, there is still a need for personal customer relations in the many steps which transform the raw material into the end product on the dealer's shelf.

The name and identity of the individual cannot be dismissed from trade relations in which his personal performance, his acceptance of the product, or his capacity as a merchant are essential to the profits of producer and distributor alike. There must be a balance, at times commanding delicate distinctions of judgment, between the immediate benefits of mechanical, anonymous record-keeping and the knowledgeable, intimate understanding of human values as they affect the movement of goods and services. Automation is a tool that requires as much management supervision as operating skill. With intelligent application to the specific assignment, it can be a boon. But it can also be a management blunder if it is regarded as a cure-all for the problems of the office manager.

The Editors

SPECIAL REPORT
Steel Buyers Get Strike Fever:
Hedge Buying Begins
IRON AGE
June is still a long way off, but steel users are st
through May and April. The lash-up in steel deliveries should
May Be Too Late—The situation in Pittsburgh indicates a nationwide trend is in the making.
Market Outlook
STEEL
With Stocks at Low Ebb, Rush Is on
DEMAND for steel is rising rapidly as consumers strive to replenish low inventories. Fabricators who let their stockpiles decline last year are suddenly realizing that they don't have enough met-
porary." Taking an opposite stand (though he foresees no allocations), a mark
clares: "I think we'll

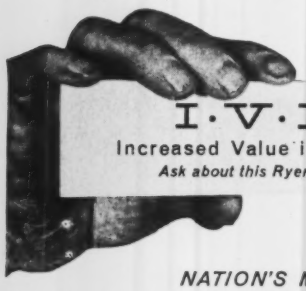
Report on Ryerson stocks as steel squeeze tightens

Steel stocks at Ryerson are at an all-time record high—in tons, types and sizes. Fortunately, Ryerson anticipated a squeeze situation and began laying in stocks of steel *months ago.* You can depend on Ryerson to furnish steel of high, uniform quality and to maintain its regular policy of fair, published prices.

Avoid loss of cost controls

Don't let the steel squeeze trap you into scrapping cost control programs based on sound inventory policies. You've proved the economies of avoiding long-term commitments—and the high "cost of possession" that goes with them. Call Ryerson for risk-free steel buying and get the steel you need when you need it—cut to exact size and ready to use.

Your Ryerson representative is well qualified to review the facts and help you get the maximum value for your steel-buying dollars. Ask him to analyze your requirements with you the next time he calls.



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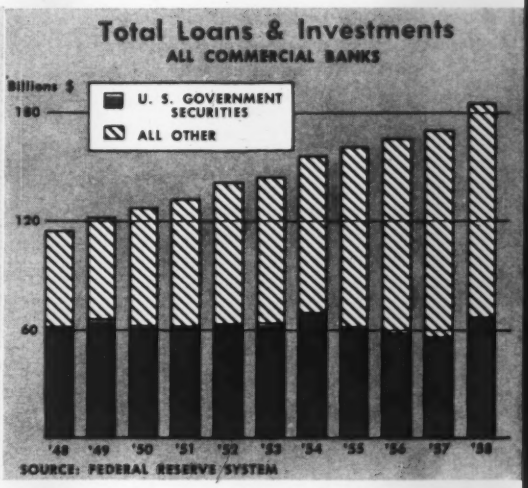
The Trend of BUSINESS

- **PRICES:** *Slight increases expected later this year will be partly due to Government financing through commercial banks.*
- **SALES:** *Another record year for retailers is in prospect, with the most noticeable gains in household durable goods.*
- **OUTPUT:** *Industrial production will hit new record levels in May and June, but declines in July and August are likely.*
- **UNEMPLOYMENT:** *The number of jobless will drift slowly downward, but recovery in this area will continue to lag.*
- **FAILURES:** *Number of casualties rose in March from February, but failure rate was lowest since mid-1957 (page 19).*



Signs Point to Summer Sag

ECONOMIC ACTIVITY took on more vigor in the early Spring months, and signs point to further gains through the month of June. But whether or not the Summer months will bring more than a seasonal decline in business conditions depends to a large extent on the outcome of efforts to avert a steel strike.

Now that pre-recession peaks have been matched, physical output will hit new highs in May and June.

More gains in the output of steel and household durable goods and steady high levels of automotive production will help total industrial production edge up through the end of June. The outlook for the third quarter is not quite so bright. Declines will be a little more than seasonal, even without a steel strike. During the Fall, industrial output again will move up close to peak levels.

The high levels of physical output will be supported by continued gains in spending by both business men and consumers.

Appreciable gains in the last half will push capital spending for 1958 moderately ahead of year-earlier levels.

Expenditures for new plants and equipment for all of 1959 will total about $32 billion, a 4 per cent increase over 1958, according to the annual survey by the U.S. Department of Commerce and the Securities and Exchange Commission. Most of the rise will be due to increased spending by manufacturers, airlines, and gas utilities. Further and more noticeable gains are likely to prevail well into 1960.

The rate of inventory build-up by business men will pick up gradually through the end of June.

During the third quarter, the pace of inventory accumulation may ease somewhat, but the current rate will be resumed in the last three months of the year. The most noticeable year-to-year gains will occur in durable goods.

A good part of the expansion in manufacturers' stocks will be due to steady gains in new orders. Here again the principal gains will be in durables, reflecting increased buying at wholesale and retail. This will mean sharp year-to-year gains in corporate profits and possibly near-record levels.

High levels of personal income will again stimulate consumer buying in the coming months. Total retail sales will hover around record levels throughout most of the year, with sellers of household durables and automobile dealers reporting the most substantial gains over year-earlier totals.

Shoppers are likely to be faced with slightly higher prices before the end of the year.

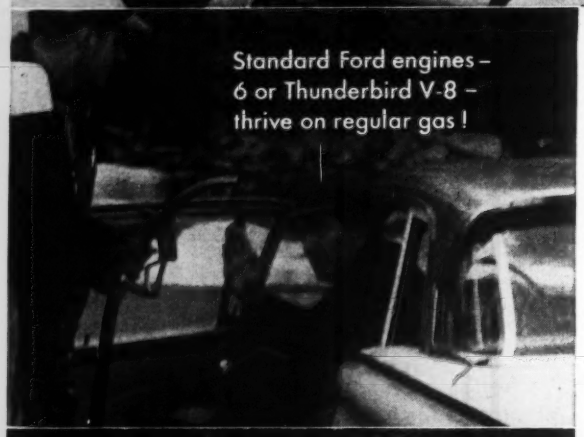
Some time late in the third quarter, consumer prices will start edging up after a few months of stability. The increases will be minor and will have little effect on consumer buying. Reports of relatively high levels of unemployment in some areas could make shoppers a little hesitant. The number of jobless will gradually drift downward, but this recovery will be slow.

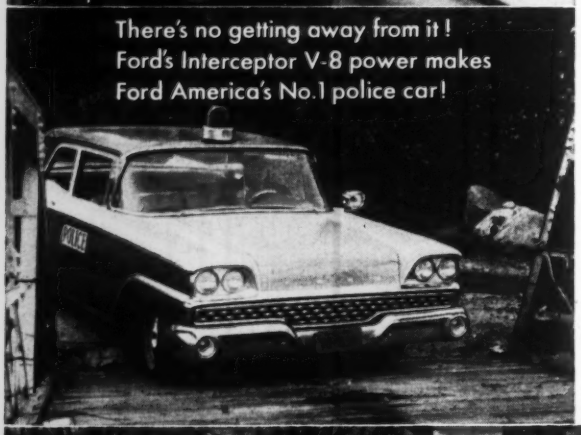
The gross national product for 1959 as a whole will hit a record of about $475 billion.

Preliminary estimates show that the gross national product, or the total output of goods and services, rose to a record annual rate of about $464 billion in the first quarter of this year, and each succeeding quarter of 1959 will show a new peak.

The big question-mark at the moment, on which third-quarter performance largely depends, is what will happen in steel.

Most business men are watching closely the so far





How to please America's toughest customers

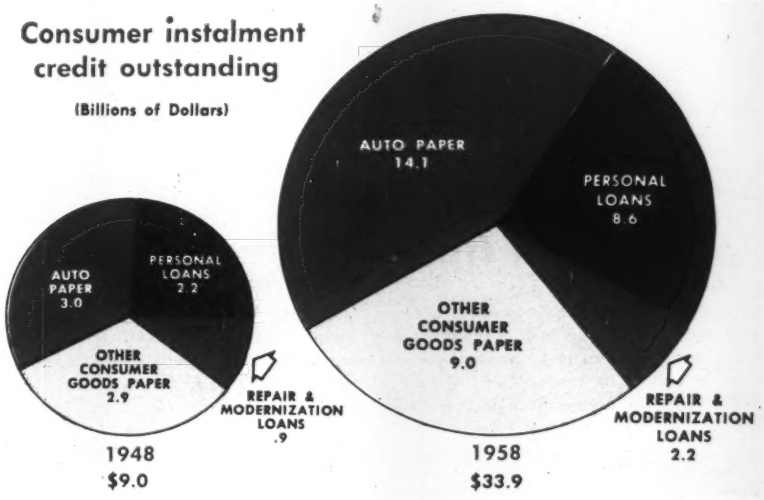
Shrewd business fleet men everywhere are reading between the lines of Ford's fabulous 1959 success. They're asking themselves *why* Ford is America's most-wanted police car, most-wanted taxicab and most popular passenger car.

And they're coming up with answers like these. For all-around economy you can't touch Ford. Both standard Ford engines—Thunderbird V-8 or "Six"—thrive on dollar-saving *regular* gas . . . oil changes only each 4000 miles . . . aluminized mufflers that normally last twice as long as ordinary ones . . . the lowest-priced car of the most popular three. In the "built-for-keeps" department, there's just no body like a Ford body. Any taxi owner or state trooper can tell you that. And any fleet man who's conscious of trade-in values can tell you Ford's got the styling that will *stay* in style . . . neat, crisp, clean.

Yes, business fleet men are taking a long, hard look before they buy. And that explains why thousands of more Fords are being sold than any other make.

59 FORD FLEETS

FORD DIVISION, Ford Motor Co.



CONSUMER CREDIT ON THE RISE: *Consumer instalment credit outstanding at the end of 1958 was almost four times greater than in 1948. Source: Federal Reserve System.*

unsuccessful labor negotiations now in progress in the steel industry. Although new orders for steel tapered off somewhat in late March, they climbed noticeably in April, as most users tried to build up supplies to tide them over a possible extended steel strike. Orders will remain at these high levels through most of May and June, and second-quarter output will reach a new record.

This will mean a decline in orders and steel ingot production in the Summer, whether or not a strike takes place. Steelmen, however, anticipate a resumption of high order and output levels in late Summer or early Fall, as over-all business activity gains momentum. Steel ingot production for all of 1959 will be noticeably higher than a year earlier.

Anticipating good business in 1960, steel companies in recent weeks have placed large orders for new machinery. Investment in new equipment will continue to rise through most of the year. Producers will be in the market for more modern cost-cutting machinery, which may mean a slow rate of rehiring of idle workers. Steelmen are becoming more concerned over the rising level of imports of steel into the United States.

Auto picture brightens

Encouraged by the first substantial Spring upturn in dealers' sales since 1955, automobile producers noticeably stepped up output schedules in recent weeks. This has led many producers to believe that 1959 will be a 5.5-million auto year, as they originally estimated late last year. It is probable that sales and output will remain at current high levels through June. After that, there is a good chance that many prospective buyers will await the introduction of the new small, compact cars to be produced by the Big Three early in 1960. This could hold sales for 1959 as a whole below the 5.5-million goal.

Good news for truck makers

The Spring upsurge has been felt in sales of trucks as well as in passenger cars. Truck manufacturers, hit relatively hard by the recession, are happy to see farmers, road builders, highway haulers, and delivery men increasing their purchases. Industry predictions indicate that truck sales this year will exceed 1958 by about 25 per cent.

Oil output will remain moderately higher than last year for the rest of 1959, reflecting rising industrial output and increases in stocks of gasoline and heating oils.

Although inventories have risen since the beginning of the year, buying remains cautious. The most marked increases occurred at the manufacturing level, where much of the rise was due to increased buying by steel users who have been stocking up against the possibility of a steel strike and higher prices. As sales pick up, manufacturers in other industries, as well as wholesalers and retailers, will start building up their stocks.

continued on page 10

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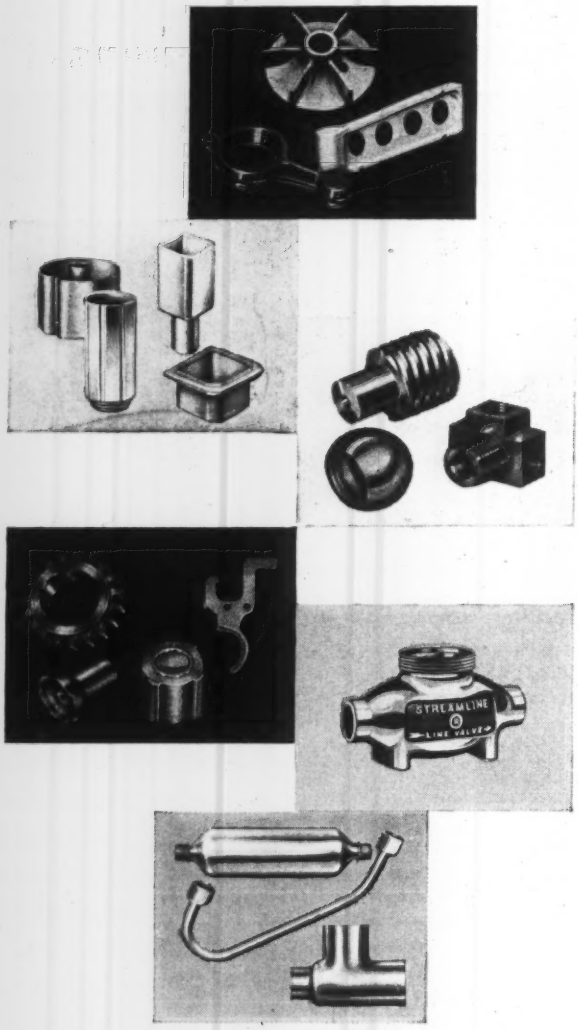

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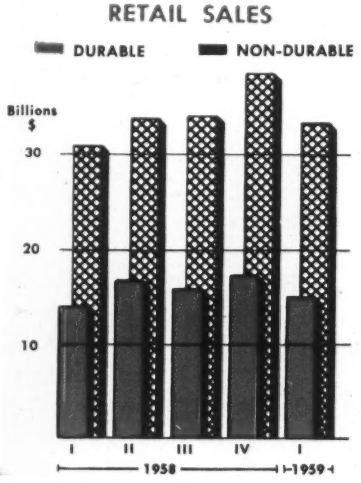
The total book value of over-all business inventories at the end of the year will be moderately higher than at the end of 1958. Part of the rise will be due to higher prices.

The year-to-year gains in wholesale volume that have prevailed so far this year will widen in the coming months, especially in durable goods. Retailers will begin to replenish depleted stocks of air conditioners, deep-freeze units, hi-fi sets, and outdoor metal furniture.

Textile and apparel sales rise

The current appreciable gains in apparel volume at wholesale will be maintained, as buyers step up their orders for new-style men's and women's Summer and Fall clothing.

Despite higher prices in many lines, textile trading has exceeded the expectations of most mills. A good part of the increase stems from higher orders from apparel manufacturers and automobile producers. Textile transactions for 1959 as a whole will be well above those of 1958.



RETAIL VOLUME *in the second quarter will rise appreciably over a year ago. Source: U.S. Department of Commerce.*

With a record Easter behind them, retailers are looking forward to another peak in 1959 dollar volume. Sales each month will be close to or above record levels.

The most noticeable month-to-month gains will be in household durable goods, and year-to-year increases will widen steadily through most of the year. In the coming Summer months, air conditioners will be in demand, and officials in that indus-

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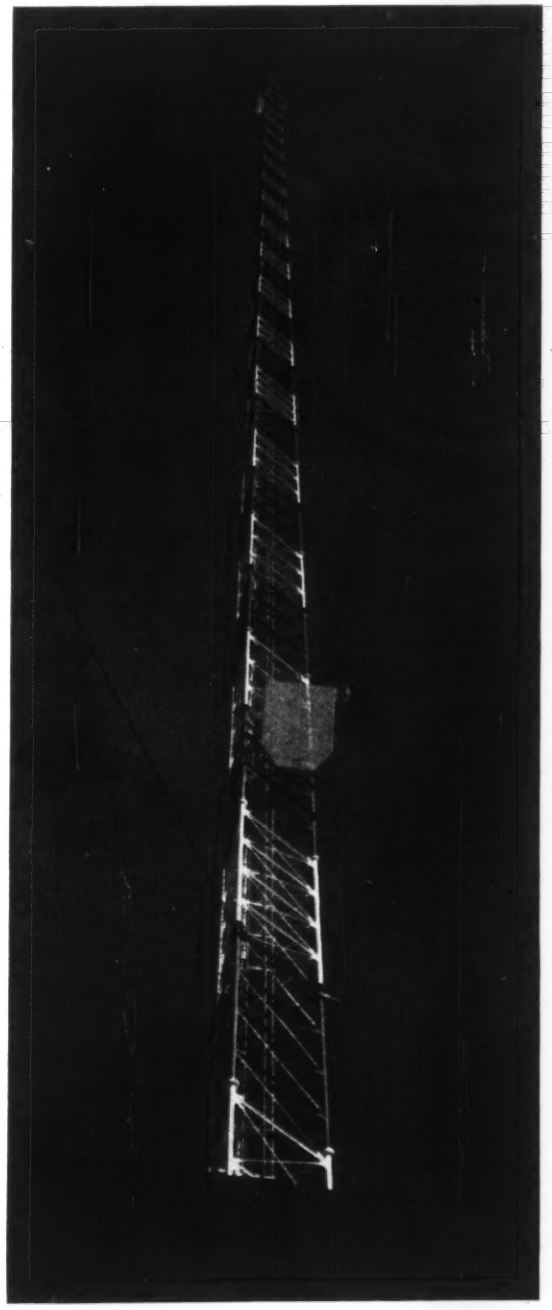


This new tower for station WIS-TV near Columbia, South Carolina, illustrates the point. It is the tallest man-made structure east of the Mississippi—1,526 feet high. If built with conventional construction, it would have weighed about 1,353,333 pounds. But by designing with USS MAN-TEN High-Strength Steel, the weight was cut to 1,015,000 pounds—a clear saving of 25%.

The designers knew that any weight savings over 16% resulting from USS MAN-TEN Steel construction meant that they could save money. Hence—the lower bid and the contract award.

But this isn't all—freight was reduced because less steel was required. Construction time was cut because of less welding and easier handling. What's more, the owner obtained a stronger tower capable of withstanding winds of 145 miles per hour.

How you can profit from USS High-Strength Steels

If you are making mobile equipment that has to be built bigger, stronger and tougher, U. S. Steel offers three brands of high strength steel in the 50,000 psi minimum yield point category—USS MAN-TEN for strength plus abrasion resistance and low cost, USS TRI-TEN for strength and toughness, and USS COR-TEN for a strength and high atmospheric corrosion resistance.

Where extra high strength is needed, USS "T-1" Constructional Alloy Steel offers a yield strength of 100,000 psi plus high resistance to impact abrasion, even at temperatures down to 50°F. below zero.

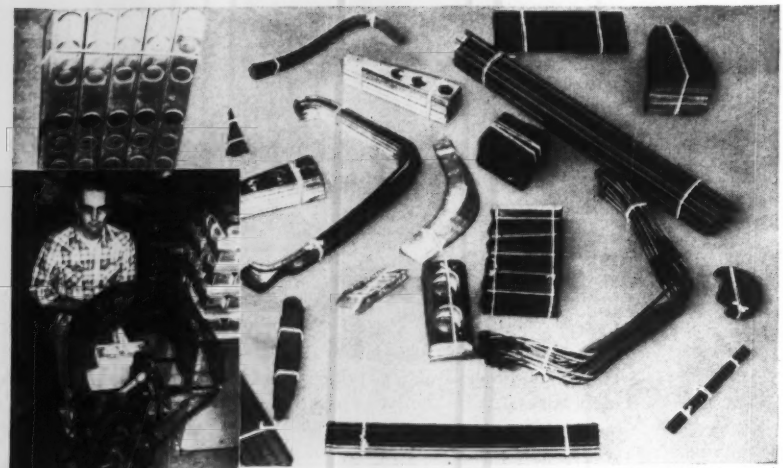
These steels are also widely used for stationary equipment. They *do* cost more per pound than conventional construction, but fewer pounds are needed. Every extra dollar spent is paid back quickly in greater carrying capacity, lower maintenance, less down-time and longer life. Write for more information. United States Steel, 525 William Penn Place, Pittsburgh 30, Pa.

USS, MAN-TEN, TRI-TEN, COR-TEN and "T-1" are registered trademarks

United States Steel Corporation—Pittsburgh
American Steel & Wire—Cleveland
Columbia-Geneva Steel—San Francisco
Tennessee Coal & Iron—Fairfield, Alabama
United States Steel Supply—Steel Service Centers
United States Steel Export Company

United States Steel

TV tower for station WIS-TV near Columbia, South Carolina. 25% lighter in weight and lower in cost than if built with standard material. Designer, Fabricator and Erector: Kline Iron & Steel Company. Owner: The Broadcasting Company of the South.



Variety of Cessna parts tied on Bunn Tying Machine range from 3 to 15 inches in diameter, 4 inches to 12 feet in length. Machine compensates automatically for varying sizes, shapes.

TIE IT better, faster by machine

At Cessna Aircraft Co. — Bunn automatic tying beats hand-taping 5 to 1 . . . cuts material costs 84 percent

Formerly, the bundles you see above were hand-fastened with cloth-backed industrial tape. Today, this plant does the same job better, faster on an automatic Bunn Tying Machine. Result? An 80% saving in labor . . . coupled with an 84% reduction in direct material costs (genuine Bunn twine vs. tape)!

Completely documented, these figures typify the savings *your* plant may well realize with Bunn automatic twine-tying. For almost *anything* you now tie by hand can be tied faster, better and at far lower cost on an easy-to-use Bunn Package Tying Machine.

Operation is simple, positive . . . and completely safe. All you do is position the object to be tied, step on the trip, and *presto:* you have a complete wrap and tie—neat and secure—in *2 seconds or less!* (About 10 times faster than ordinary hand-tying.) And remember—size or shape of the item to be tied makes no difference. The Bunn Tying Machine adjusts automatically to handle anything . . . from mail to machine parts . . . from cartons to laundry bundles.

Why not learn how Bunn automatic twine-tying can speed production and reduce costs for *you*. Return the coupon today.

BUNN PACKAGE TYING MACHINES Since 1907

B. H. BUNN CO., 7605 Vincennes Ave., Dept. DR-59, Chicago 20, Ill.
Export Department: 10406 South Western Ave., Chicago 43, Ill.

MAIL COUPON NOW FOR MORE FACTS

GET THE WHOLE STORY
Send today for this fact-packed booklet, which illustrates the many advantages of Bunn Tying Machines.
Or let a Bunn Tying Engineer show you.
No obligation.

B. H. BUNN CO., Dept. DR-59
7605 Vincennes Ave., Chicago 20, Ill.

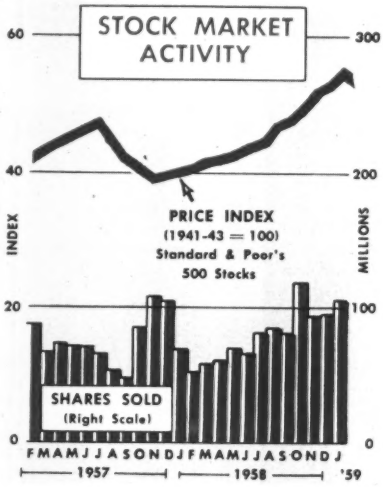
☐ Please send me a copy of your free booklet.
☐ Please have a Bunn Tying Engineer contact me.

Name_____
Company_____
Address_____
City_____ Zone____ State_____

8222

try expect sales to set a new record.

Although the usual Summer slump in apparel sales will occur, substantial gains over last year will be maintained. Increases in women's apparel will continue to be more noticeable than in men's wear.



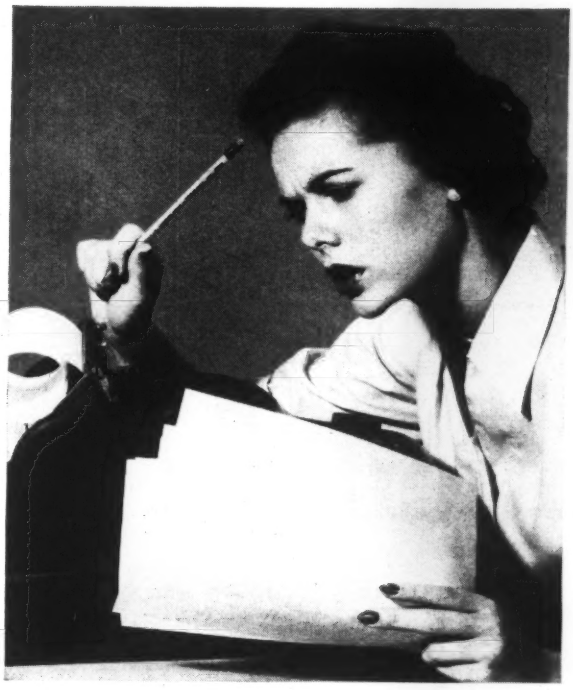
STOCK PRICES *in mid-April bounced back to the highs of earlier this year. Sources: N.Y. Times, Standard and Poor's Corp.*

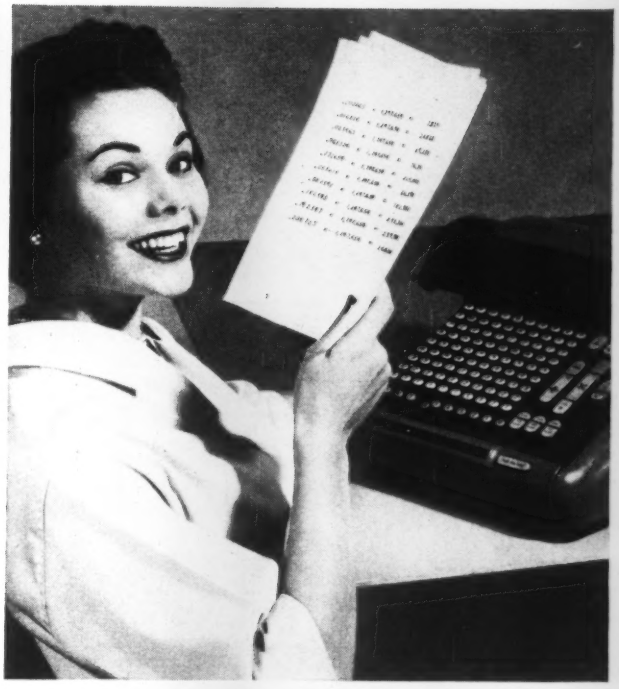
The increased interest in big-ticket items will mean further use of instalment credit by consumers. Although sluggish early in the year, automobile credit outstanding has shown substantial increases recently, and further gains will help boost the over-all level appreciably over a year ago in the coming months.

More workers, higher incomes

Behind the rise in retail sales will be continued high levels of employment, which will hold hourly and weekly earnings close to the record levels achieved in early Spring and boost personal incomes to new peaks. Increases in employment will continue to be greater than decreases in unemployment, because of a steady rise in the labor force. This was the case in early Spring, although the number of jobless declined much more than usual for that time of year. A good part of the decrease at that time was the result of a noticeable rise in rehirings in the steel industry, as mills took on more workers to cope with the marked rise in new orders.

The number of cities classified by the Department of Labor in the cate-





PUZZLED or *POSITIVE* about decimal points?

Positive—always—with the Marchant Deci·Magic...world's only calculator with completely automatic decimals!

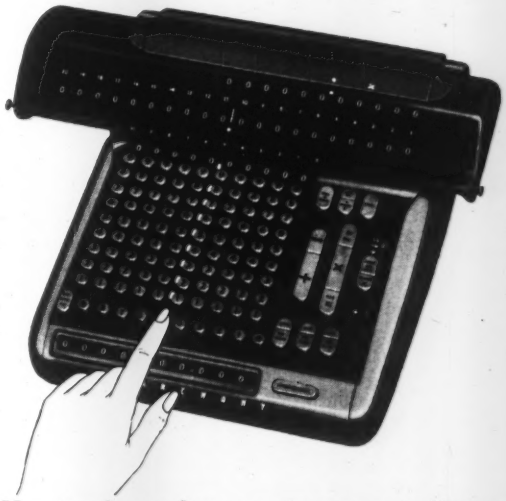
Touch one key just once on this amazing calculator, and you've set *all* your decimals—for the problem *and for the answer!*

Then, just "write" your figures in the keyboard as you would on paper. Deci·Magic does the rest . . . *all of it!* You get your answer with the decimal point in the right place . . . *automatically!*

You can be confident of your own accuracy, too. With the Marchant Deci·Magic, you have a *visible dial check* on all entries throughout the calculation.

For *any* calculator user, the Deci·Magic's doubt-free decimal accuracy means greater sureness and ease than ever before.

The simplicity of the Deci·Magic must be seen to be appreciated. For a demonstration on your own figurework, just phone your nearest Marchant office. Or, for detailed information, send the coupon.



You touch one key one time to set all your decimals automatically...that's Deci·Magic!

Modern Management Counts on Marchant

MARCHANT CALCULATORS

Division of SMITH-CORONA MARCHANT INC.

OAKLAND 8, CALIFORNIA

MARCHANT CALCULATORS • OAKLAND 8, CALIF.

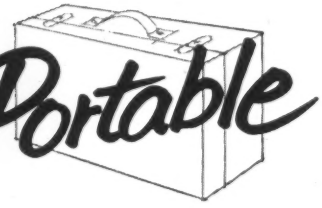
Please send more information on the amazing simplicity and completely automatic decimals of the Deci·Magic calculator.

NAME _____ H-5

PLEASE ATTACH COUPON TO YOUR BUSINESS LETTERHEAD

Ready to travel or stay put!

Introducing the Recordak *Portable*



Here at last is a wonderfully capable microfilmer that weighs less than an office typewriter—*just 24 lbs.*

Take the Recordak Portable wherever the work is—from office to office . . . plant to plant . . . city to city.

Simple for anyone to operate. Just plug it in and you're ready to take pictures. Many unusual features—for example, who would imagine that two rolls of film could be exposed simultaneously in so trim a microfilmer?

New Portable opens door for even the smallest concerns to enjoy all the short cuts and protection which microfilming *alone* provides. At the same time, larger firms will find the new Recordak Portable a valuable adjunct to present microfilmers. Or use several Portables in decentralized microfilming.

Mail coupon today for free booklet giving full details.

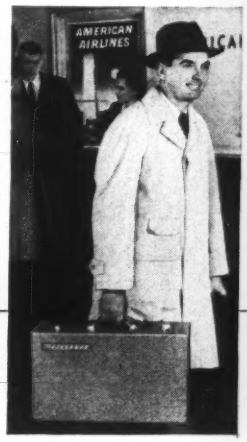
"Recordak" is a trademark

RECORDAK

(Subsidiary of Eastman Kodak Company)

originator of modern microfilming—
now in its 32nd year

Take it from office to office



. . . city to city

. . . desk to desk

Microfilmer

Just feed documents into new Recordak Portable and they're photographed.

MAIL COUPON TODAY

Recordak Corporation, 415 Madison Avenue, New York 17, N.Y. HH-5

Gentlemen: Send free booklet giving details on new Recordak Portable Microfilmer

Name_____ Position_____

Company_____ Street_____

City_____ State_____

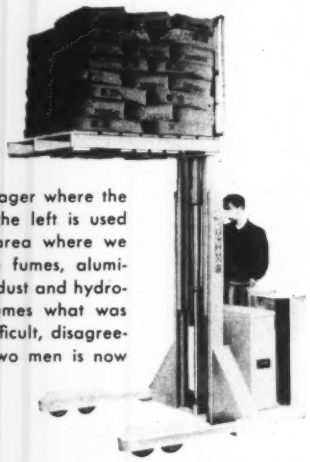
EXPLOSION PROOF
CLASS I GROUP D
POWERED LIFT TRUCKS

Underwriters' Laboratories, Inc.
INSPECTED
TYPE EX
REVOLVATOR COMPANY

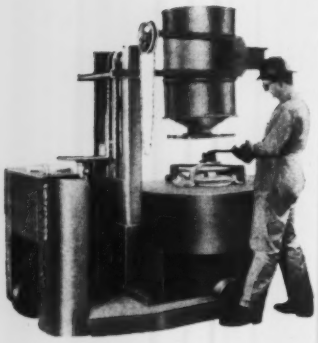
APPROVED and PROVEN

8 YEARS ON THE JOB

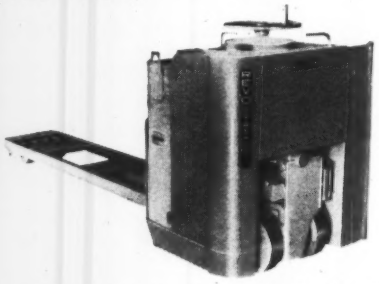
Since 1951 Revolvator Go-Getters, designed for this service, have been specifically approved by leading industrial insurance companies for use in Class I Group D explosion hazardous areas in major plants from coast to coast. User comments like those below show that the Go-Getter has been more than approved by safety authorities . . . it has been proven in use for eight years.



The Plant Manager where the Go-Getter at the left is used says, "In an area where we have explosive fumes, aluminum choloride dust and hydrochloric acid fumes what was previously a difficult, disagreeable job for two men is now easy for one."



Air in the color mixing room of the finishing plant where the Go-Getter above is used carries organic dusts as well as explosive fumes. The foreman says, "The men like the Go-Getter and use it steadily."



Executives in the chemical plant where the model to the right is used say, "We use the Go-Getter in our area which has the most severe hazard." Another plant where quantities of explosive solvents are used for "wash down" reports of a similar model, "We are well pleased and we are ordering another Go-Getter."

A major insurance association writes, "We are quite willing to accept the unit (Go-Getter) as it is designed with explosion proof housings for the motors and controls as usually specified for electrical equipment that can be safely used in explosion hazardous areas."

A nationally known safety engineer writes, " . . . calling the existence of this line of trucks to the attention of the industry as we believe many would want to know about this equipment."

The Go-Getter is the latest addition to a complete line of materials handling equipment for use in explosion hazardous areas that Revolvator has been building for over a quarter of a century.

REVOLVATOR CO.
8702 TONNELE AVENUE, NORTH BERGEN, N. J.
SINCE 1904

gory of "substantial unemployment" fell moderately in recent months, and further slight decreases are anticipated through June. The number of these cities, however, will remain above year-ago levels.

Lower food prices will continue to hold the Government's index of consumer prices on its current plateau until late in the Summer. At that time, higher costs of apparel, transportation, and most other goods and services will offset any further dips in food prices and will bring a slight rise in over-all prices.

This gradual upward movement in prices will result partly from low inventories and high sales in many lines. In addition, much of the financing of rising Government spending will be done through commercial banks (see chart on page 5). This will increase the money supply in the economy and provide another stimulus for higher prices. The outcome of the demands for higher wages in the steel industry could also cause more inflation.

Record year for construction?

Total construction outlays have stayed at record levels so far this year and are likely to reach a new peak for the year as a whole. This will be supported by high levels of private spending for alterations, repairs, and modernization on existing structures and for new office buildings and stores. Public spending for dams, schools, highways, and hospitals also will be high.

Current high levels of applications for FHA insurance indicate the number of housing starts will remain until mid-year close to the higher-than-expected levels set early this year. Although starts will slip downward after June, the number of non-farm dwellings started for the year as a whole will be about 1.3 million, the third highest year on record, exceeded only in 1950 and 1955.

Trading in early April slackened on the New York Stock Exchange, but by mid-month had regained the record highs attained earlier in the year. There was more caution than has prevailed in some recent months, despite the more favorable news on business activity.

This report was prepared in the Business Economics Department, DUN & BRADSTREET, INC., by John W. Riday.

Sit on it, stand on it–

ASE's honeycomb top will keep its perfect surface

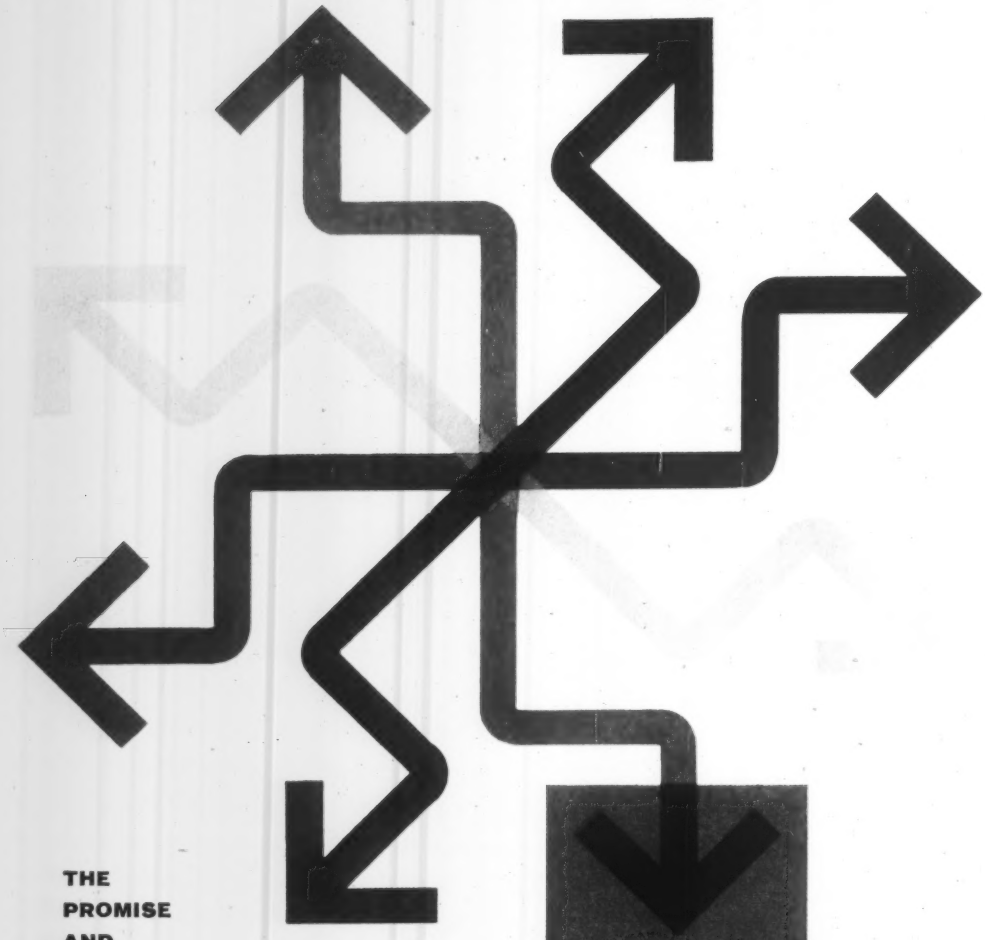
Productive people are active people. Good to have around, but hard on furniture. This edge-sitter, for instance, might harm another desk. But ASE's exclusive honeycomb top will stand many times his weight. This same construction is used in airplanes for its strength and ability to keep a perfect surface. Tops on *all* ASE desks are made this way. Yet, you pay no more for this extra quality that adds so much to value and service.

Give your active people efficient, attractive furniture from ASE. It's quality made to *stay* looking nice. It requires minimum maintenance —protects your investment for years to come. Let your ASE dealer show you this complete line of office furniture. He will be glad to assist with your floor planning and decorating, too.

A·S·E

ALL-STEEL EQUIPMENT Inc., Aurora, Illinois

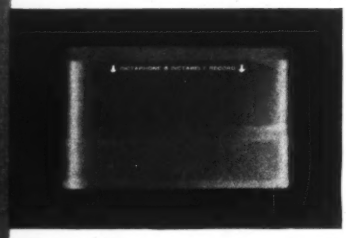
Desks • Chairs • L-units • Credenzas • Tables
Bookcases • Filing Cabinets • Storage Cabinets



THE PROMISE AND PROBLEM OF EXPANSION

As you expand for the 1960's, a modern Dictaphone system can mean vital savings. One floor covering manufacturer saves $162,000 a year. A mail order house saves $21,000. Economic forecasts promise rapidly accelerated production and sales in the 60's. But expansion poses problems, too: more paper work, higher office costs. Modern Dictaphone dictating equipment can trim those costs by 1/3 or more. Let a Dictaphone consultant show you how to expand your office efficiency four ways: 1. More actual work done in less time. 2. Fewer additional people needed. 3. Less office equipment needed. 4. Less costly office space. For any dictating or recording problem, call your nearest Dictaphone headquarters. Our representative will analyze your needs without cost or obligation.

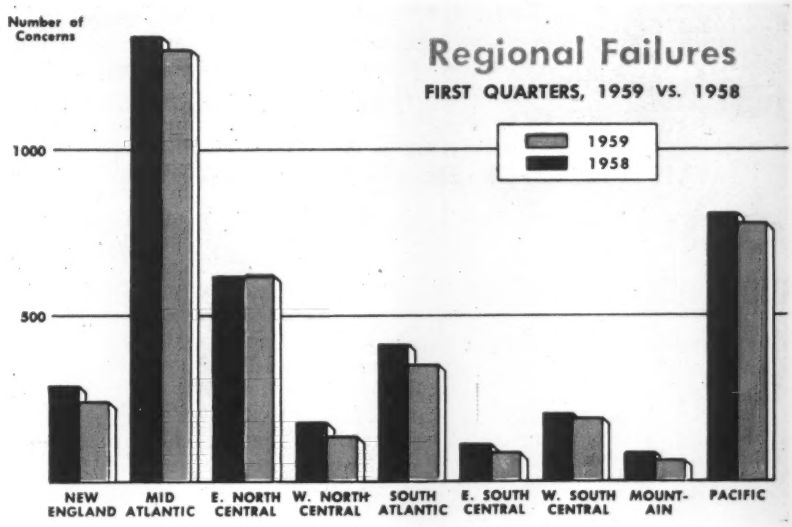
Dictaphone CORPORATION



All-transistor Dictaphone TIME-MASTER is the first truly automatic dictating machine, the only one using the Dictabelt record—the recording medium *designed* for dictation.

DICTAPHONE, TIME-MASTER AND DICTABELT ARE REGISTERED TRADEMARKS OF DICTAPHONE CORP., 420 LEXINGTON AVE., N.Y. 17, N.Y.; 204 EGLINTON AVE. E., TORONTO, CANADA; 17-19 STRATFORD PL., LONDON W.1, ENGLAND.

Business Failures



Casualties Take Slight Upturn

BUSINESS failures, both in number of concerns and size of liabilities, increased moderately during March. A total of 1,263 casualties occurred, 9 per cent more than in February. Liabilities totalled $65.1 million, 11 per cent above the previous month. Despite these gains, however, failures did not return to the January level and remained considerably below the postwar high of 1,495 recorded in March a year ago.

The rate of failure continued to decline, sinking to 50 per 10,000 enterprises listed in the DUN & BRADSTREET *Reference Book*. This, the lowest level since the middle of 1957, compared with 60 per 10,000 last year.

Tolls ran higher during March in all size groups above $5,000. In fact, casualties in the $25,000 to $100,000 class reached a ten-month high. However, only the million dollar failures matched their March 1958 total; their aggregate losses bulked three times as large as a year ago.

Manufacturing mortality rates changed little from February, while wholesaling climbed most steeply—21 per cent. In retail trade, tolls among apparel, general merchandise, and building materials concerns fell to the lowest level so far this year; whereas casualties in the food, automotive, and restaurant lines rose to their highest 1959 levels. Services continued up.

In all types of operations, fewer concerns succumbed than in March last year. In manufacturing, where a strong 25 per cent decline prevailed generally, the apparel and leather industries suffered only about half as many casualties as a year ago. The wholesaling decline centered in the building materials trade, and the construction decrease

THE FAILURE RECORD

	March 1959	Feb. 1959	March 1958	% Chg.†
DUN'S FAILURE INDEX*				
Unadjusted	54.4	59.0	64.8	−16
Adjusted, seasonally	50.4	50.9	60.0	−16
NUMBER OF FAILURES	1263	1161	1495	−16
NUMBER BY SIZE OF DEBT				
Under $5,000	160	164	173	− 8
$5,000–$25,000	596	543	692	−14
$25,000–$100,000	387	340	477	−19
Over $100,000	120	114	153	−22
NUMBER BY INDUSTRY GROUPS				
Manufacturing	210	207	281	−25
Wholesale trade	126	104	141	−11
Retail trade	625	582	750	−17
Construction	185	164	202	− 8
Commercial service	117	104	121	− 3
LIABILITIES (*in thousands*)				
CURRENT	$65,051	$58,592	$71,555	− 9
TOTAL	66,646	58,592	71,699	− 7

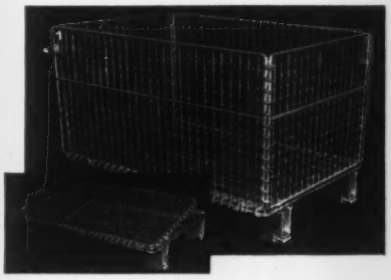
*Apparent annual failures per 10,000 enterprises listed in the DUN & BRADSTREET *Reference Book*.

†Percentage change, March 1959 from March 1958.

In this record, a "failure" occurs when a concern is involved in a court proceeding or in a voluntary action likely to end in a loss to creditors. "Current liabilities" here include obligations held by banks, officers, affiliated and supply companies, or the governments; they do not include long-term publicly held obligations.

the NEW PALLETAINER 'Junior'

• • • Palletainer 'Junior' models are sturdy, close-meshed, all steel containers. Ideal for *all* small parts handling—storage and transport.



Junior Model No. 3220
Overall dimensions: 32" long, 20" wide, 16" high. Mesh openings 1⅛" square. Weight 38 lbs. Capacity 500 lbs. All welded steel rod mesh, reinforced at points of stress. 4 fabricated "easy stack" steel legs welded to bottom deck. Folds down quickly and easily to save over 75% of the open area.

Model No. 2016 ▶
Overall dimensions: 20" long, 16" wide, 12" high. Mesh openings 1⅛" square. Weight 25 lbs. Capacity 200 lbs. Same durable construction as model 3220 but not a fold-down unit.

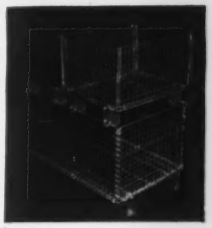


Illustration shows how two No. 2016's can be stacked on larger No. 3220.

Write today for new catalog showing the big, heavy-duty Palletainers and the new "Junior" models.

USP UNION STEEL PRODUCTS CO.
ALBION, MICHIGAN

DANGERS of launching a NEW PRODUCT

Snell Research can help overcome them

Here's how, in some typical case histories of Snell clients:

Product Research and Development—A few years ago Snell was retained to develop new products, applications, and markets for sugar. Extensive research and development work by Snell resulted in the creation of a new synthetic detergent—based on *sugar!*

Product Application—A Snell client in the paper industry, for whom we had developed a fine additive, wanted to explore uses in other fields. Unfortunately, their highly qualified staff's experience was limited to the one field. Snell, with experts in practically every product field, found the new product has potentialities as both a good emulsifier and a paint plasticizer. Only the very largest manufacturing companies can duplicate the breadth of experience and background the Snell "brain-trust" of technical experts can offer you!

Product Improvement—One Snell client found their product, an adhesive bandage, slipping in quality. Tape was going gooey in storage on druggists' shelves. Snell research helped this client bring his product quality up to equal the best on the market, and retain his share of sales.

Product Evaluation—A Snell brewery client wanted to expand production and take advantage of a more efficient production technique but feared the taste of the beer might suffer. Snell food technologists, taste panels, and engineers checked the new process and hundreds of samples of beer made under new and old systems, recommended the switch to the more profitable modern process. The change went unnoticed by the customers, and sales continued to climb.

Market Research—A Snell client with a waste product had briefly considered building a plant to use it to manufacture another product; but had given up after their own brief survey showed the new product to be already overproduced. When they consulted Snell for checking, however, Snell predicted there would be a shortage within three years. The client waited two years, built the plant—and now has a profitable new product instead of a waste!

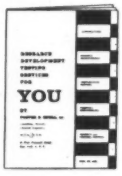
Toxicology—One of the largest frozen food companies began getting complaints on the flavor of one of their green vegetables. Since hundreds of thousands of dollars were at stake, they consulted Snell to find out what was wrong. Snell by analyzing tests, and checking on the farm, was able to prove that the taste—actually toxic—was due to a new type of insecticide sprayed on the fields hundreds of yards away on a windy day long before the harvest!

Engineering—A large midwestern firm desired to produce its own brand of instant coffee, to possess outstanding flavor, body, and bouquet. They engaged Snell to design their extraction line, which is now economically producing a superior product, and have since doubled capacity. Since that time, two additional plants have been modified under our supervision to increase production and improve product characteristics.

What's Your Product Problem?—Whatever it is, and whatever your product field—chemicals, chemical specialties, personal products, pulp and paper, protective coatings, plastics, textiles, foods, petroleum, rubber—Snell has men who "know the score" in that field, and who can work with you creatively and profitably in developing, producing, protecting, and marketing new ideas. This broad experience can be decisive in protecting not only your ideas, but also the thousands of dollars you spend developing them. And the cost of Snell service is less than you might imagine! Half the jobs we do cost less than $1000!

SEND FOR FREE BOOKLET

On Research Development & Testing "SERVICES FOR YOU." It tells you how Snell can serve YOU! No obligation, of course. Foster D. Snell, Inc., Dept. D-5, 29 West 15th Street, N. Y. 11, N. Y.



FDS **SNELL**

New York, N. Y.
Baltimore, Md.
Bainbridge, N. Y.
Worcester, Mass.

was in general building contracting.

Among retailers, food, general merchandise, drug and automotive tolls held close to year-ago levels. But casualties in apparel, furniture, appliances, building materials, and eating places fell one-fourth to one-third.

Big cities suffer least

All except two of the nine major geographic regions reported more businesses in distress than in the preceding month. However, in none of them were tolls so heavy as in the similar month of 1958. Declines exceeded 20 per cent in five areas and were particularly marked in the large cities.

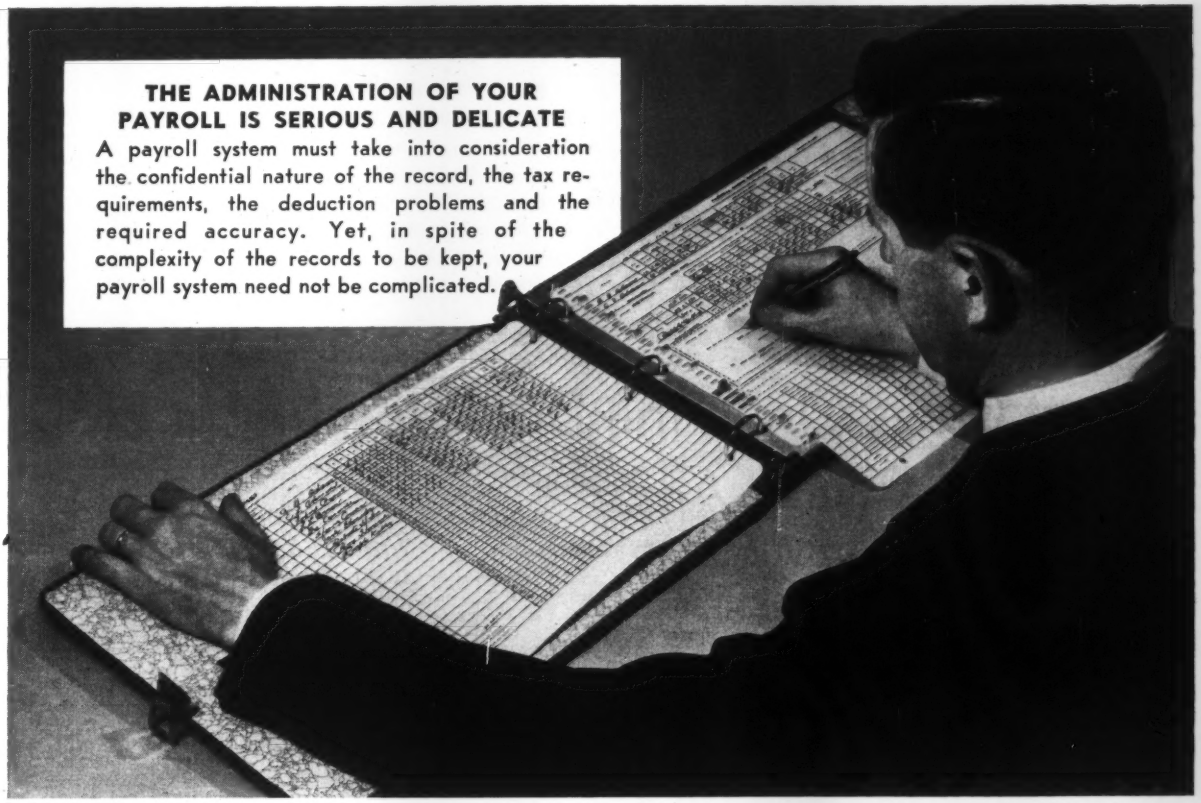
Among individual states, the Connecticut toll dipped to the lowest mark in more than two years, and the Florida toll was the smallest in a year and a half. In contrast, Illinois casualties climbed to the highest since 1942, and marked year-to-year increases also prevailed in Rhode Island, New Jersey, Georgia, Washington, and Oregon.

FAILURES BY DIVISION OF INDUSTRY

	Cumulative total January–March		Liabilities in million $ January–March	
	1959	1958	1959	1958
MINING, MANUFACTURING...	632	708	57.1	72.6
Mining—coal, oil, misc...	18	22	2.9	3.5
Food and kindred products	46	50	3.3	3.6
Textile products, apparel..	111	147	5.2	9.4
Lumber, lumber products..	111	116	4.9	10.3
Paper, printing, publishing.	44	44	1.8	3.2
Chemicals, allied products.	17	11	1.0	0.3
Leather, leather products..	23	36	1.7	5.4
Stone, clay, glass products.	14	19	1.7	2.5
Iron, steel, products.....	36	40	2.7	3.6
Machinery.....	73	79	15.7	4.7
Transportation equipment.	21	21	2.2	9.3
Miscellaneous.....	118	123	14.0	16.6
WHOLESALE TRADE.....	362	383	21.1	19.7
Food and farm products...	77	89	5.9	3.9
Apparel.....	12	25	0.7	1.3
Drygoods.....	6	13	0.1	0.4
Lumber, bldg. mats., hdwre	34	54	2.9	4.8
Chemicals and drugs.....	14	9	0.4	0.2
Motor vehicles, equipment.	29	19	2.3	0.4
Miscellaneous.....	190	174	8.9	8.7
RETAIL TRADE.....	1,849	2,088	75.9	67.4
Food and liquor.....	297	284	9.7	6.5
General merchandise.....	94	81	4.6	3.7
Apparel and accessories...	296	378	18.2	12.1
Furniture, furnishings.....	236	291	9.4	12.6
Lumber, bldg. mats., hdwre	116	142	4.2	5.3
Automotive group.....	246	290	7.1	12.4
Eating, drinking places...	331	388	11.0	9.6
Drug stores.....	27	34	0.8	0.7
Miscellaneous.....	206	200	11.0	4.5
CONSTRUCTION.....	537	555	26.8	30.5
General bldg. contractors..	176	235	12.4	17.7
Building subcontractors...	310	288	11.2	10.9
Other contractors.....	51	32	3.1	1.9
COMMERCIAL SERVICE.....	317	278	16.4	11.1
TOTAL UNITED STATES.....	3,697	4,012	197.2	201.3

Liabilities are rounded to the nearest million; they do not necessarily add up to totals.

This report was prepared in the Business Economics Department by Rowena Wyant.



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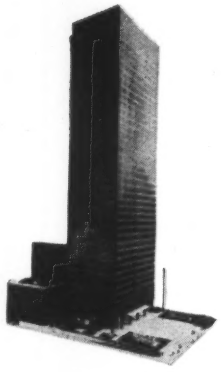

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This is Miss Virginia Arrington, of Joseph E. Seagram & Sons, Inc., New York. As Manager of the Stenographic and Duplicating Department, it's part of Miss Arrington's job to supervise a mighty important room at Seagram's. It's called the Davidson Room – and inside are two Davidson DUAL-LITHS (Models 221 and 241). Not only are we delighted to be so memorialized . . . we're doubly pleased that Miss Arrington says: "We'd be lost without those DUAL-LITHS!"

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WASHINGTON Business Front

JOSEPH R. SLEVIN

- ***Inflation danger receding? Wary Government experts are eying current price stability with growing optimism.***
- ***A lot depends on business. Administration officials think big companies can and should hold price line.***
- ***Meanwhile, labor debates unemployment remedies as Congress cold-shoulders 35-hour week proposals.***

WASHINGTON, D.C. — Consumer prices have changed little during the past year, and there now is a growing belief that the United States has a fighting chance to prevent inflation. It's a pleasant prospect that has come with the Spring. Government economists are quick to point out that it is only a prospect—not a certainty and not, for that matter, a prediction. But they believe, nonetheless, that it is a genuine prospect that must be reckoned with and that can be made to come true.

The present mood of cautious optimism is in marked contrast to the attitudes that held sway as recently as last Fall. Government policymakers then were talking bravely about their high hopes for price stability, but they obviously didn't believe a word of it.

People have a habit of thinking of the future in terms of the immediate past, and professional economists aren't immune from this general failing. When retail prices were climbing rapidly, there was a widespread expectation that they would continue to climb. Now that prices have held steady for a year, there is a growing disposition to suspect they may remain stable for some time to come.

Popular psychology plays a significant role in price movements. The things that people expect to happen can influence what does happen. One of the best ways to lick inflation, consequently, is to convince people that prices won't continue to rise.

One of the reasons why Government economists are becoming more hopeful about the price outlook is that they have detected no evidence of extensive speculative buying. Business men have been rebuilding inventories since the beginning of the year, but most of it has been normal, even cautious, restocking. The only outsized ordering has been by metal users who fear strikes in steel and other basic industries. Purchases of capital goods are rising slowly. Business men apparently have no plans to touch off an early repetition of the 1956–57 capital goods boom.

Government economists currently are more optimistic about the chances of holding the price line this year than next. That's partly because it's easier to gage near-term developments and partly because there will be favorable forces at work in 1959 that may disappear in 1960.

"Creeping inflation" has become an evil phrase to Administration advisers. It means price increases of 2–3 per cent a year, and what the economists hope—but don't predict—is that any price advance next year will be appreciably smaller than that.

The most powerful force making for stable prices in 1959 is the agricultural cycle, which is in a favorable-to-consumers phase. Hog marketings are chiefly responsible. Farmers have been raising more hogs, and the prices of pork products have been falling.

Barring a disastrous crop failure, the seasonal movements mean that declining food prices will exert a strong downward pressure on living costs during the last half of 1959—and will add another six months to the price stability span.

Manufacturers on the spot

The biggest question marks have been inked above the prices of nonfood items ranging from automobiles and kitchen appliances to textiles and clothing. If the prices of these goods are held steady, the chances of licking inflation will improve substantially. If the prices of these goods go up, then there almost certainly will be a fresh advance in consumer prices next year. Government economists say the only development that could save the day would be an unexpectedly severe break in food prices that would offset both the rise in the prices of nonfood items and the persistent advance in service charges.

Administration officials increasingly are of the opinion that corporations can and should hold prices in line this year. First quarter earnings were big, and the Administration economists share the general expectation that corporate profits will hit a record high in 1959. Some Federal experts think corporations with big earnings ought to take the lead in fighting inflation by cutting prices. Others don't

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go quite that far, but say, with President Eisenhower, that corporations have a public duty to conduct their operations—notably including wage negotiations—in a manner that will enable them to keep prices in line.

The Administration advisers believe that the United States now has the best opportunity to halt inflation that it has had since World War II. They warn that a failure to seize the opportunity may so undermine public confidence that the chance won't come again.

The Government forecasters' belief that the United States can halt price inflation is coupled with a notion that this could prove to be the longest and healthiest of the postwar upturns. It has started out more quietly than any of the others, and they think that is all to the good.

Business and the big freeze

There has been a great deal of talk about the initial sharpness of the recovery movement, but the more the Government economists study the figures, the more doubtful they are that the rise was as steep as the statistics indicate. The Winter of 1957–58 was nasty and cold. The Government analysts now suspect that the cold weather curtailed business activity during the Winter and made the recession seem more severe than it was. Similarly, they think the upturn seemed sharper than it was because at first it reflected activity that had been delayed by the Winter storms.

The notion that this period of prosperity may last longer than its immediate predecessors stems in large measure from the same lack of speculative buying that has helped to bring about price stability. Consumers apparently haven't been overbuying automobiles and appliances the way they did in 1955, and business men haven't been building excess inventories and unneeded productive capacity the way they did in 1956 and 1957. In short, the American economy hasn't been producing goods that it won't need until next year or the year after.

This suggests to the Federal economists that business activity may purr along at high, but not excessive, speed for quite some time to come. It may not turn out that way, but if it does, this upturn will generate fewer distortions than its predecessors did—and the next downturn will be a milder and less painful correction.

Some labor spokesmen claim that

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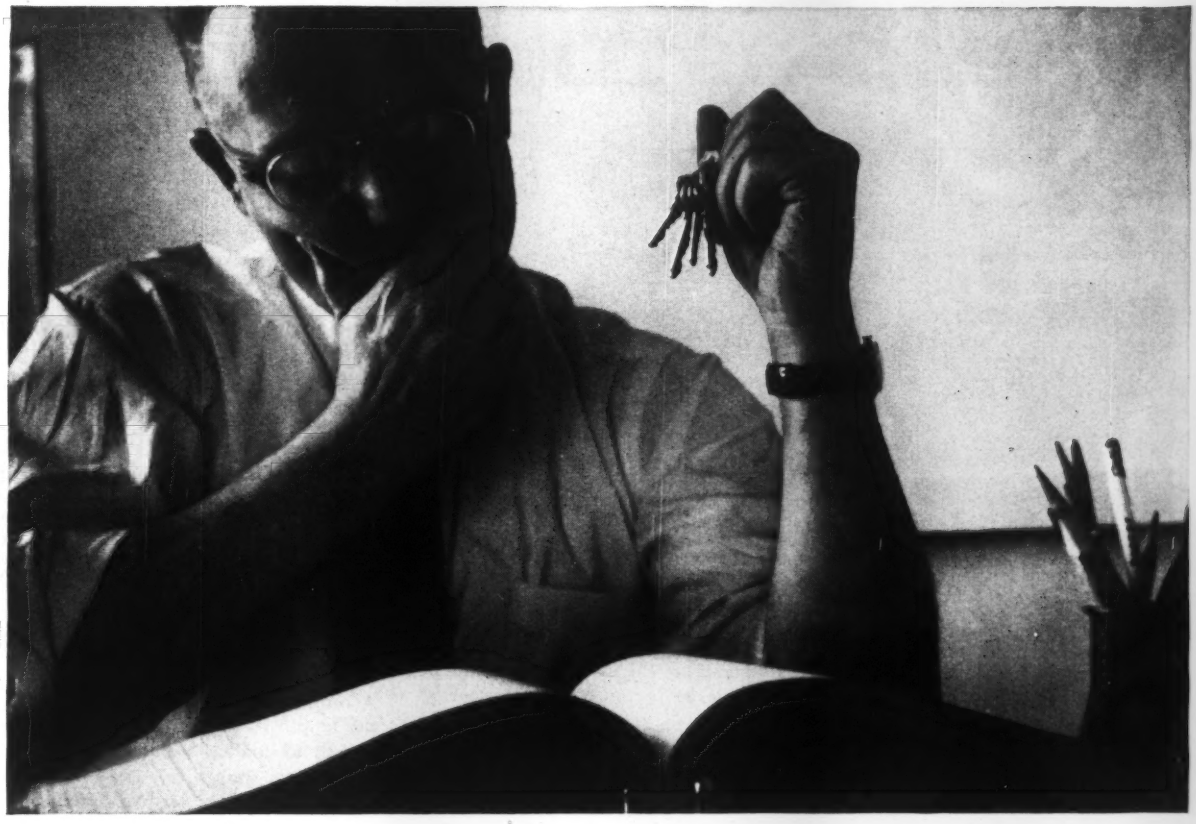

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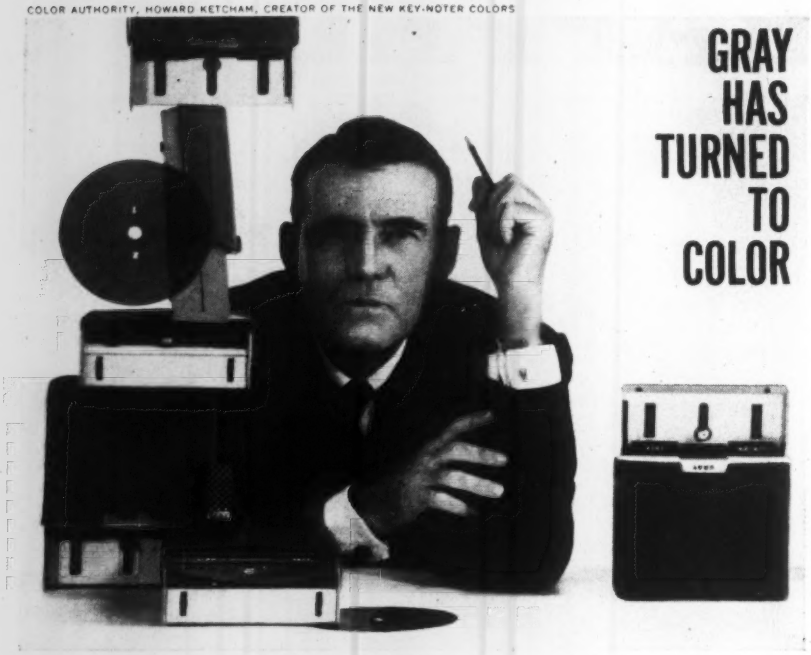

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unemployment has remained high because the recovery has been too slow, but professional, nonpolitical Government experts disagree. They argue that the hard core of the 1959 unemployment will be absorbed only gradually and won't respond to a general pick-up in business activity—unless, of course, it's a supercharged war boom of the sort that began with the Korean fighting. Many of the unemployed are semi-skilled workers who have been laid off by automobile, steel, and other metalworking plants. Automation has taken their jobs, and their former employers don't need them any more. These workers will be able to get new jobs only after retraining and, in many cases, after relocation.

Work week cut fading

Congress is showing no enthusiasm for an AFL-CIO recommendation that it cut the work week from 40 to 35 hours. It's a spread-the-work idea, and many legislators question the wisdom of putting a ceiling on the work week at a time when the United States is trying to expand its economy in competition with the Soviet Union. A number of union leaders argue that the length of the work week ought to be left to collective bargaining. Some say wages ought to go up before workers get more leisure. Others say there ought to be more leisure, but a 35-hour week isn't the solution. United Steelworker president David J. McDonald has said he will ask the steel companies for a three-month sabbatical every five years. Other suggestions include a four-day week, longer vacations, more paid holidays.

Democrats' hopes rising

The in-fighting among the supporters of Senate Democratic presidential aspirants is getting rougher by the day. It's only recently that the Democrats have decided that their nomination may be important. They had been inclined to think that the Republicans would take the White House again in 1960, since there is no Democratic candidate with a formidable national reputation. But the Democrats are becoming less sure that their appraisal is right. One consequence of the change in mood has been increasing pressure for social welfare legislation from members of the Senate Democratic liberal bloc. They will save their heaviest cannonading for the 1960 pre-convention session. END

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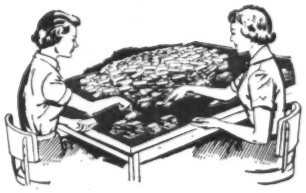

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BEN P. SAX, *chairman of the board, American Buff Company*

Retraining Workers

There is an immediate need for a complete and realistic evaluation of automation and its social and economic implications and for planned procedures based on this evaluation.

The thinking of engineers, economists, and sociologists must be gathered and correlated so that sensible and realistic planning can be accomplished to alleviate the hardships to employees which may well attend an increase in the use of automatic production processes. This can be done by programs to retrain employees to function in new work areas.

This should be a continuing study which would consider developments as they appear and correlate them with the over-all picture and which would anticipate changes in workforce.

The framework for activating this study could be an automation foundation or institute sponsored by industry. In the meantime, individual companies can help by making studies of their own operations. Greater efforts should be made within each company to retrain workers displaced by automated processes. But the big job must be done on a broad base, for many of these workers will have to be absorbed by other companies and industries.

Undoubtedly, new industries and services will take up the slack. However, what we need now are directional patterns of manpower demand to activate retraining incentive.

From a speech before a Chicago meeting of foreign manufacturers.

DR. D. H. EWING, *vice president, research and engineering, Radio Corporation of America*

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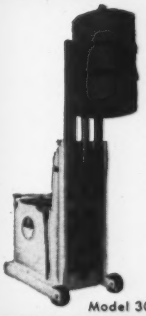

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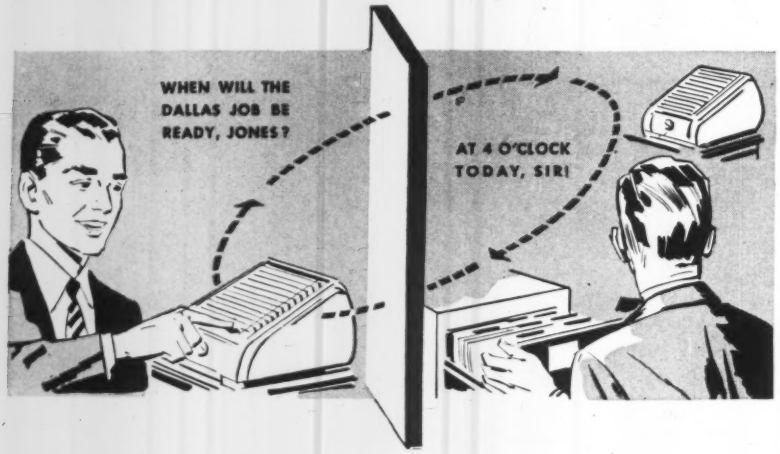

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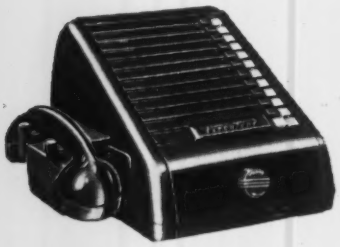

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From a speech at commencement ceremonies at RCA Institutes.

HARVEY WILLIAMS, *president, Philco International Corp.*

A Plan for Private Aid

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by Leopold of Burlington, Iowa

CRAFTED IN THE **HEART** OF THE BLACK WALNUT REGION

resources, and then will originate and direct programs to meet the expectancies and aspirations of the peoples of such areas.

Such an Overseas Development and Investment Board should be empowered to coordinate the resources, knowledge, and competence of American agriculture, labor, technology, management, and private industry with the resources of Government and its existing financial institutions. It should be empowered also to encourage and arrange for the participation of other free nations in joint projects.

From a speech before the Mississippi Valley World Trade Conference.

CLOUD WAMPLER, *chairman of the board, Carrier Corp.*

End of an Illusion

Millions upon millions of our fellow citizens have come of voting age, in a land which is the world's greatest citadel of personal freedom and initiative, with an acceptance of the fantastic notion that it is perfectly wonderful if government will do more and more for them because someone else—heaven knows who!—will pay the bills. And so, the apostles of economy in government have become the truly "forgotten men" of our times.

But our folly is now catching up with us. It is hitting us in our pocketbooks. And we'll have to do something besides screaming to reverse the trend. We'd better do some individual soul-searching. We'd better examine our consciences. We must face up to the simple fact that we are going to pay for what we get. If we want to pay less, we can't keep asking for more.

From a speech before the Carrier Cabinet, 300 corporation executives.

Dealers offering complete office planning

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Paragould—Trice Brothers, Inc.

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Bakersfield—Valley Office Supply
Fresno—Healey & Popovich
Glendale—Hopper's Office Furniture
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San Bernardino—Stockwell & Binney
San Diego—Austin Safe & Desk Co.
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San Jose—Kennedy Bus. Mach.
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Springfield—Jefferson Stationers
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Mason City—Yelland & Hanes
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Waterloo—Latta's, Inc.

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Salina—Consolidated Prtg. & Stat.
Topeka—Thacher, Inc.
Wichita—Bauman Office Equip. Co.

KY. Lexington—Transylvania Prtg.
Louisville—O'Connor & Raque

LA. Alexandria—Garrett Off. Sup.
Baton Rouge—Louisiana Off. Sup.
Crowley—Geo. W. Rollosson & Son
Lafayette—General Office Supply
Lake Charles—Lake Charles Off. Sup.
Monroe—Standard Office Supply Co.
New Orleans—J. D. LeBlanc, Inc.
Shreveport—Castle Printing Co.

ME. Bangor—Bangor Office Supply
Portland—F. O. Bailey Co., Inc.

MD. Baltimore—Baltimore Stationery Co.
Modern Stationery Co.
Salisbury—White & Leonard

MASS. Boston—Contract Sales, Inc.
L. E. Muram
L. J. Peabody Office Furn. Co.
Framingham—H. M. Nichols & Co.
Worcester—Palley Office Supply Co.

MICH. Battle Creek—Wellever Bus. Sys.
Detroit—J. L. Hudson Co.
Kalamazoo—Dykema Office Supply
Midland—The McKay Press
Pontiac—General Prtg. & Off. Sup.
Sault Ste. Marie—Sault News Prtg.

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Faribault—The Beltz Co.
Minneapolis—Miller Davis Co.
New Ulm—Kemske Paper Co.
Owatonna—Journal-Chronicle
Rochester—Whiting Stationers, Inc.
St. Paul—McClain & Hedman Co.

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Greenwood—Fisher Stationery Co.
Hattiesburg—Standard Off. Sup.
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Joplin—Joplin Printing Co.
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Sikeston—Scott Office Equipment
Springfield—Elkins-Swyers Co.

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Great Falls—Tribune Printing & Sup.

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Lincoln—Latsch Brothers
Omaha—Orchard & Wilhelm Co.

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Driver Desk Company
Chas. J. Lane Company
Metwood Office Equipment Corp.
Pearl Desk Co.
Regan Office Furniture Co.
A. Pearson's Sons, Inc.
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Rochester—Heinrich-Seibold Stat.
Syracuse—J. Hi isberg Safe Co.
Utica—Genesee Office Equip. Co.

N. C. Charlotte—Pound & Moore Co.
Fayetteville—Fayetteville Off.
Greensboro—Kinney-Keesee Sup.
New Bern—Owen G. Dunn Co.
Raleigh—Capitol Printing Co.
Edwards & Broughton Co.

N. D. Bismarck—Gaffaney & Shipley
Fargo—Gaffaney's Office Specialty
Grand Forks—Gaffaney's Off. Spec.
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OHIO Akron—Summerville's
Canton—Office Equipment Co.
Cincinnati—Globe Office Equipment
Cleveland—Randolph Desk Co.
Columbus—F. J. Heer Printing Co.
Dayton—Archie Sherer Co.
Elyria—Lorain County Stationers
Findlay—Evans Typewriter Co.
Toledo—Newell B. Newton Co.

OKLA. Ardmore—National Off. & Bank Supply
Bartlesville—Bartlesville Stationery
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Oklahoma City—House of Wren
Ponca City—S'western Stat. & Bank
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Tulsa Stationery Co.

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Portland—Kubli-Howell Co.

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Erie—Rider Office Equip. & Sup.
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Harrisburg—Cole & Company
New Castle—Castle Stationery Co.
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Philadelphia—A. Pomerantz & Co.
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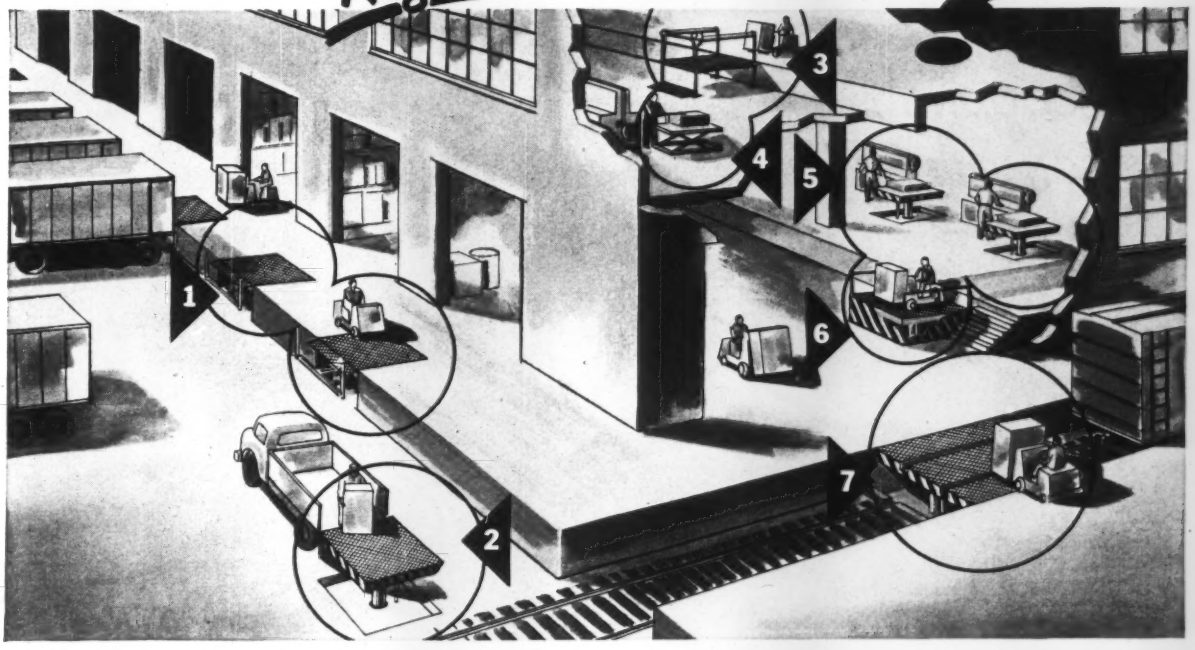
HOW MANY THINGS CAN YOU FIND *Right* IN THIS PICTURE



Globe Lifts and Ramps are the right answers to every heavy lifting or loading operation

Every one of the circled areas in the picture above is the *right* answer to a particular handling operation such as you will find in plants and warehouses everywhere.

One of these lifts may fit into *your* picture. For example:

(1) *Globe Trans-O-Matic® Dock Leveling Ramps* can be installed at any planned or existing dock. They provide a smooth passageway from the dock to the carrier —cutting loading or unloading time as much as 25% to 50%.

(2) *Globe Platform OiLIFTS®* can be used anywhere, indoors or out, to raise heavy loads from ground level to carrier with smooth oil-hydraulic power. Platform sizes, lifting capacities, controls, etc., to meet every handling condition.

(3) *Globe Electro-Loaders®* are cutting man-hours of heavy handling jobs as much as 80%. Require no ground excavation. Available as portable units. Shown in picture above as a means of leveling off a split-level plant floor.

(4) *Globe Table Lift,* a portable hydraulic powered scissor-arm lift, or

(5) *Globe Machine Feed Table,* permanent oil-hydraulic platform lift installation keeps stock pile always level with machine bed for faster, more productive machine feeding with fewer fatigue-producing motions.

(6) *Globe Ramp Eliminator* installed at split floor level saves waste space of long sloping inclines.

(7) *Globe Bridge Lift* short-cuts vehicular traffic over sunken railroad spur tracks.

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The cure: Automatic Electric P-A-X, the *dial* internal telephone system that speeds communication throughout your organization, and *leaves your regular switchboard free* for outside calls.

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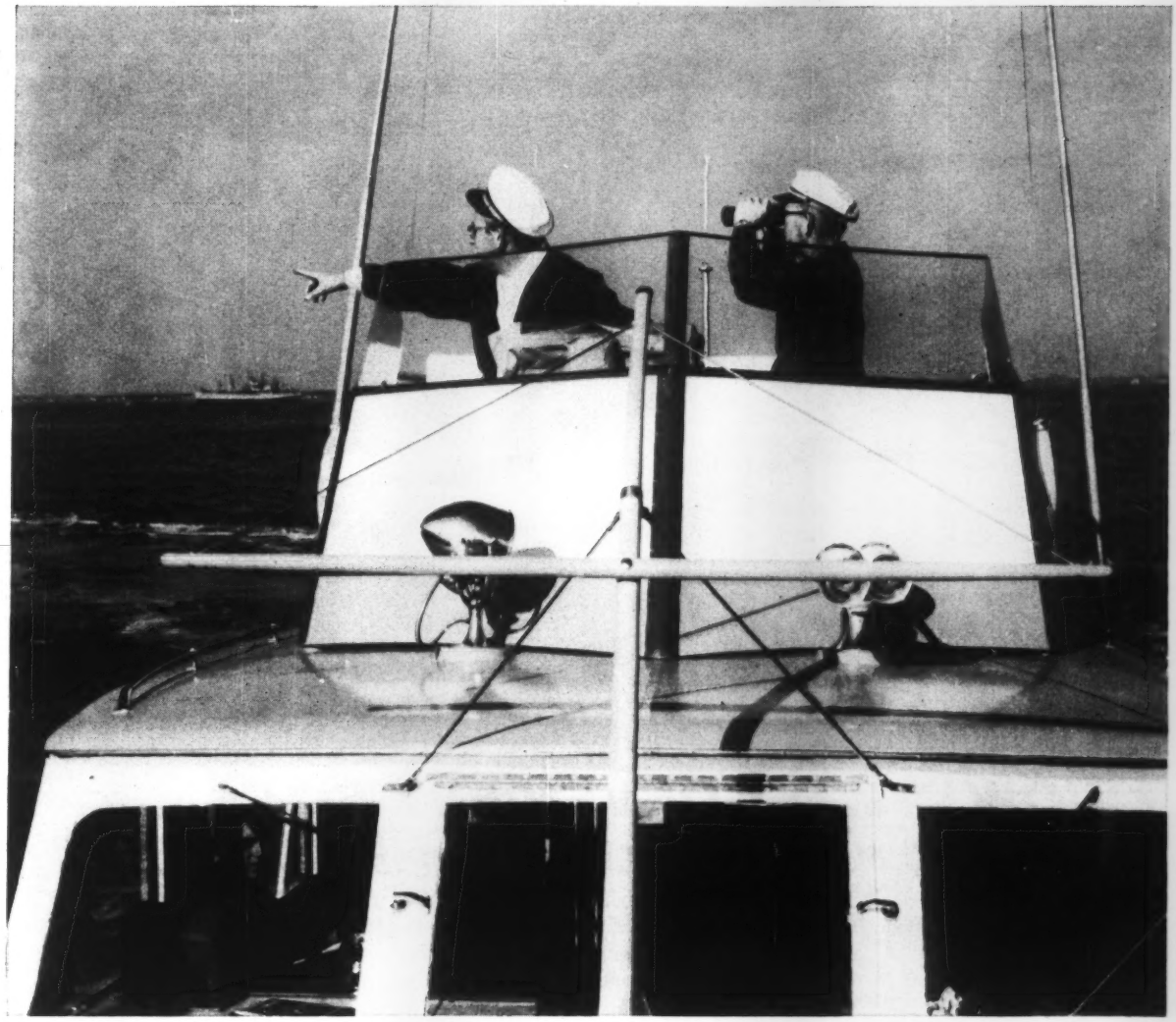
It's the SECOND Telephone that marks the efficient executive!



You could dock the largest freighter at our new plant!

Deep water frontage on Virginia's busy Hampton Roads offers industrial advantages and living advantages in *depth*. You're central to the whole Atlantic Coast. A hundred ship lines link you with world ports. You enjoy superb, long-season boating, swimming, fishing.

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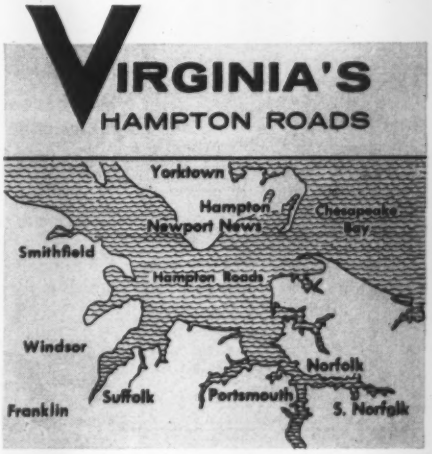

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Serving the Top-of-the-South . . . in Virginia, West Virginia and North Carolina

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Large Economy Model at $635,000 • Handy Personal Model at 98¢

For the first time, you can now get the Fairchild F-27 – first American turbine-powered transport in service with airlines and corporations – in two (2) sizes. The Large Economy Model, priced to sell at only $635,000, gives you everything you've ever wanted in an airline or executive transport:

300 m.p.h. speed . . . luxurious, roomy, stand-up cabin (40 seats for airlines, custom-designed flying office or cargo carrier for business) . . . air conditioning . . . pressurization . . . rapid simultaneous loading of passengers, cargo . . . sleek, modern design . . . unsurpassed short-field capability . . . operating economy . . . easy maintenance . . . propjet power.

The Handy Personal Model F-27, superbly styled by master model-maker Revell from authentic Fairchild blueprints, is yours at a rock bottom 98 cents at your local model dealer. The Fairchild insigne or decals of a number of the 13 airlines that have purchased the F-27 are available. Or you may prefer to decorate with insignia of 20 large corporations that have ordered the F-27.

Whether you choose the Handy Personal Model at 98 cents, the Large Economy Model for only $634,999.02 more, or both for $635,000.98, you've got the best buy in aircraft today.

Penny for penny, dollar for dollar, the F-27 is your best investment as a profit making airliner, as an efficient, fast, far-ranging corporation transport.

FAIRCHILD F-27

FAIRCHILD ENGINE AND AIRPLANE CORPORATION • HAGERSTOWN, MARYLAND

NATIONAL STEEL REPORTS ON 1958 & THE FUTURE

The improvement in general business conditions in the last half of 1958 resulted in the Company's 1958 operations achieving an average rate of 66% of capacity—about 5 percentage points above the average operations of the industry as a whole. Shipments of 3,249,000 tons in 1958 compared with 3,961,000 tons in 1957. Current operations are close to 100% of our present increased capacity of 7,000,000 tons per year. And the near term outlook is promising.

Subsequent to the close of the year, the Company announced a long considered major program of expansion that is of overriding importance to everyone directly associated with National Steel, to the communities where our facilities are located and to users of steel and steel products throughout the nation. The program is this:

A $300,000,000 EXPANSION

Representing a most important step in the Company's long-term development, this new $300 million program, which extends over a three-year period, covers these principal developments:

New expansion at Weirton. The program calls for a further rounding out of the Weirton division's facilities, increasing its capacity for the production of electrolytic tin plate, and increasing the production of cold rolled sheets and improving their processing.

New Detroit-area expansion. Under the program, ingot capacity at Detroit will be increased from 3,700,000 to 4,200,000 tons per year, and a new 80-inch continuous hot strip mill will be installed. It will be the world's fastest and most powerful. With this new "*Mill of the Future*" we will have an elasticity of product specification both as to quality and quantity that will be outstanding in the industry. The additional capacity will enable us to provide for future growth in the Detroit area and at the same time supply initially the needs for hot rolled coils of the new finishing mills near Chicago. Requirements of the new mills will help even out fluctuations that may occur in operations of the Detroit plant.

New Northwestern Indiana plant. The third section of the program calls for the construction of a sheet and tin plate plant, to be operated by our Midwest Steel division, in the Chicago area with an initial capacity in the order of 1,000,000 tons per year. National Steel has a growing list of customers with increasing requirements in the Chicago area which we can serve better from a fully modern plant there. Simultaneously we can release some of the existing capacity at Weirton to serve the increasing demands of customers who are better located for service from that operation.

As Chairman George M. Humphrey and President Thomas E. Millsop have pointed out, the whole $300,000,000 expansion "is in line with our policy of being outstandingly the best in the fields we are in and know so well."

CONTINUED GROWTH IN 1958

New construction, new equipment. Contributing significantly to the overall growth of the Company in 1958, many important projects were completed, including: New sinter plants in operation at both Great Lakes and Weirton, resulting in an increase of more than 20% in the productive capacity of our blast furnaces. The erection of a new building and installation of new slitting equipment and a new color coating line at the Terre Haute, Indiana, plant of Stran-Steel Corporation. The completion and operation of a fourth continuous galvanizing line at Weirton. And the establishment of a new Research and Development Department to conduct a permanent program on a corporation-wide basis.

New products. Among those introduced in 1958: The new GLX-W line of columbium-treated steels that provide strength well above the highest levels of ordinary carbon steel—strength obtainable previously only in alloy grades at greater cost. New types of zinc-coated steels with different surface characteristics and heavier coatings on one side than on the other. And steel buildings in factory-applied color—another National Steel first.

National Steel's performance in 1958 clearly indicates the Company's ability to sustain its record of substantial continuing growth. And now, with the launching of our new expansion program, we are taking a bold step that opens whole new vistas of building further expansive strength into the Company as future opportunities are developed.

1958: A SUMMARY

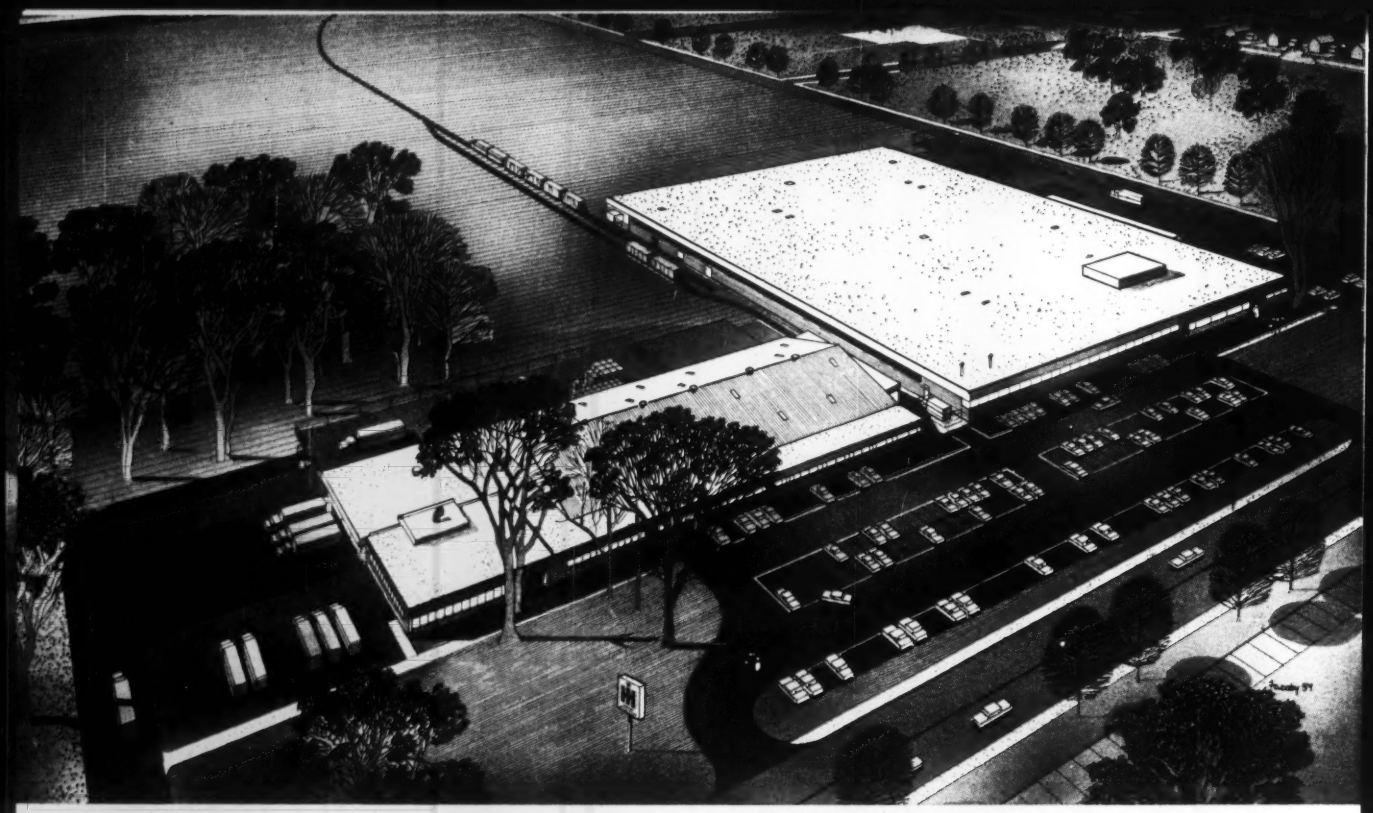
	1958	1957
Net sales	$539,957,294	$640,967,342
Net earnings	35,827,414	45,518,884
Net earnings per share	4.80	6.13
Total employment costs	182,223,804	198,589,029
Total dividends paid	22,298,906	29,667,767

A copy of our 1958 Annual Report will be sent upon request.

NATIONAL STEEL CORPORATION

GRANT BUILDING PITTSBURGH, PA.

OWNING AND OPERATING—Great Lakes Steel Corporation • Stran-Steel Corporation • Weirton Steel Company
The Hanna Furnace Corporation • Hanna Iron Ore Company • National Mines Corporation • Midwest Steel Corporation
National Steel Products Company • Enamelstrip Corporation



International Harvester's new $2,000,000 depot, located with the help of the Central, on a 71-acre site in Columbus, Ohio

"Suits us just fine!" says International Harvester of the site recommended by the Central

Half the problem for site seekers is knowing where to look! That's why the help of experts like the New York Central's Plant Site Consultants can prove so valuable.

Case in point: the International Harvester Company. They wanted to locate a new parts depot and sales office in Columbus, Ohio . . . got in touch with the Central. After going over their requirements, the Central was able to suggest a 71-acre site which suited International Harvester "particularly well!"

The Central's assistance didn't stop there. It arranged for the purchase of additional property . . . lined up utility services . . . provided elevation and cross-section maps of the site . . . obtained the easements for storm drainage.

Service like this is, of course, tailored to specific needs; but what the New York Central has done for International Harvester . . . and for scores of other companies—it can do for yours. Appraisals are carefully matched to your needs and market requirements. And are provided at no charge on a confidential basis.

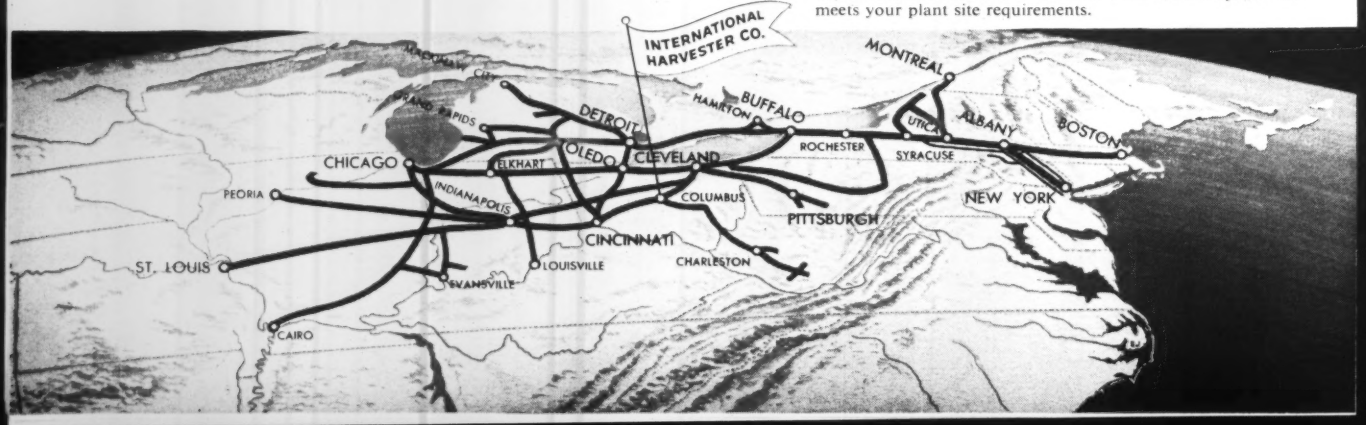
Your inquiries are invited. For more information, write to: Otto W. Pongrace, Director of Industrial Development, Department E, New York Central Railroad, 466 Lexington Avenue, New York 17, New York.

Plant-Site Opportunities

Illustrated brochures available:

1. Albany-Troy-Schenectady
2. Ashtabula
3. Boston
4. Buffalo-Niagara
5. Cal-Sag (Chicago Area)
6. Chicago
7. Cleveland
8. Detroit
9. Elkhart
10. Gardenville, N.Y.
11. Hudson River Valley
12. Indianapolis
13. Lorain-Elyria-Sandusky
14. New York City Area
15. Rochester
16. St. Lawrence Seaway
17. Syracuse
18. Utica
19. Western Mass.
20. Youngstown
21. Industrial Parks in Ill., Ohio, N.Y., Mass., and Mich.

Large or small, there's a "Central" location on the modern 11,000-mile rail network of the New York Central System that meets your plant site requirements.



See how this **new Edison VOICEWRITER** dictating machine helps you break through your "time barrier" to new success!

You'll take the mike . . . dictate . . . and suddenly you'll realize that any other dictating method is now old-fashioned!

You'll see how this all-new Voicewriter saves man-hours by acting as a rapid, foolproof dispatcher of correspondence . . . a communicator of instructions . . . a conference reporter . . . a sounding board for sales talks, ideas and speeches! Its features? All you would expect to find in the finest dictating machine ever built . . . and then some!

Think we've exaggerated? We offer you a friendly challenge to mail the coupon—"take the mike" at your own desk, with your own work, for just a few minutes! Once you take the mike...*your* talk will be our best sales talk!

FREE TRYOUT!—Just fill out and mail this coupon to Edison Voicewriter, West Orange, New Jersey. Your Voicewriter representative will do the rest. No obligation!

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McGRAW EDISON

New **Butlerib**™ *panels* create the*

BOLD AND BEAUTIFUL LOOK

for **Butler buildings**

Take a look at the new Butlerib panels being installed at the right. Notice the unique pattern. A combination of deep and shallow corrugations creates dramatic shadow lines . . . a new sculptured look. Butlerib gives industrial and commercial buildings a new, distinctive appearance. It is the new standard cover for Butler buildings—the fastest, lowest-cost way to build well.

New Butlerib panels make the Butler system of building an even better, faster way to build well. Butler pre-engineering saves countless hours of routine engineering. Butler mass-production eliminates costly custom fabrication. Precision roll-formed, new Butlerib panels fit the Butler structural system to a "T", permit fast, bolt-together assembly methods that save you weeks – even months – of costly construction time . . . put you in business and earning profits that much sooner.

Get full details on Butler buildings and new Butlerib panels from your nearby Butler Builder. Ask him about Butler financing, too. He's listed in the Yellow Pages under "Buildings" or "Steel Buildings." Or write directly to us for literature.

*Patent Nos. D178605; D178659

And the most weathertight cover ever offered as standard construction

New Butlerib panels are not only beautiful, they're extremely functional. The new corrugated pattern makes them the strongest, most rigid cover panels ever offered on Butler buildings. This means that there's even less deflection under wind and snow loads. Joints stay tight and snug.

Butlerib panels offer maximum protection at lowest cost. Secured with modern self-clinching fasteners (see photo at right), Butlerib panels are installed quickly . . . economically. And they do not require the costly maintenance and repairs of traditional construction.

BUTLER®

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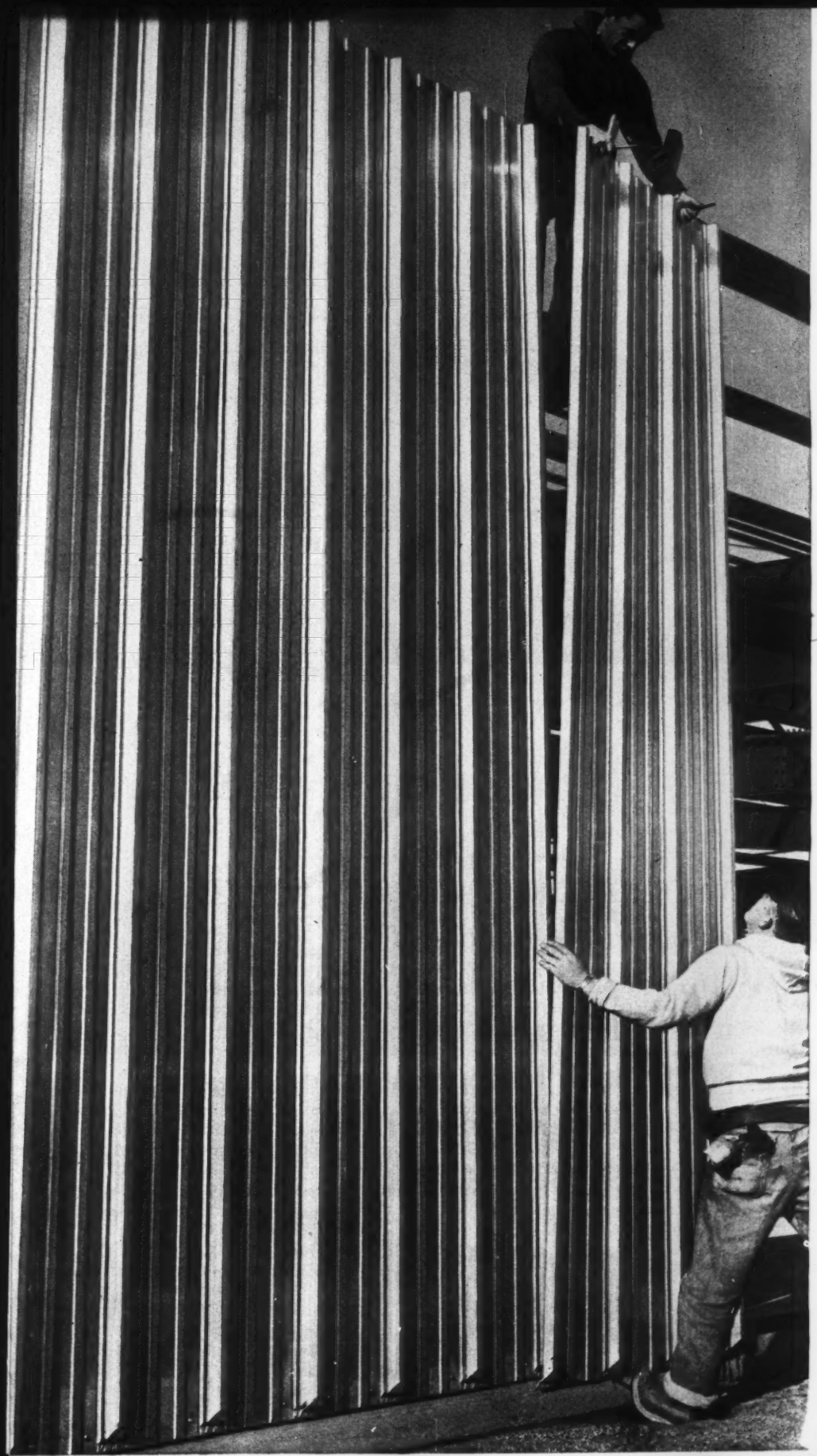
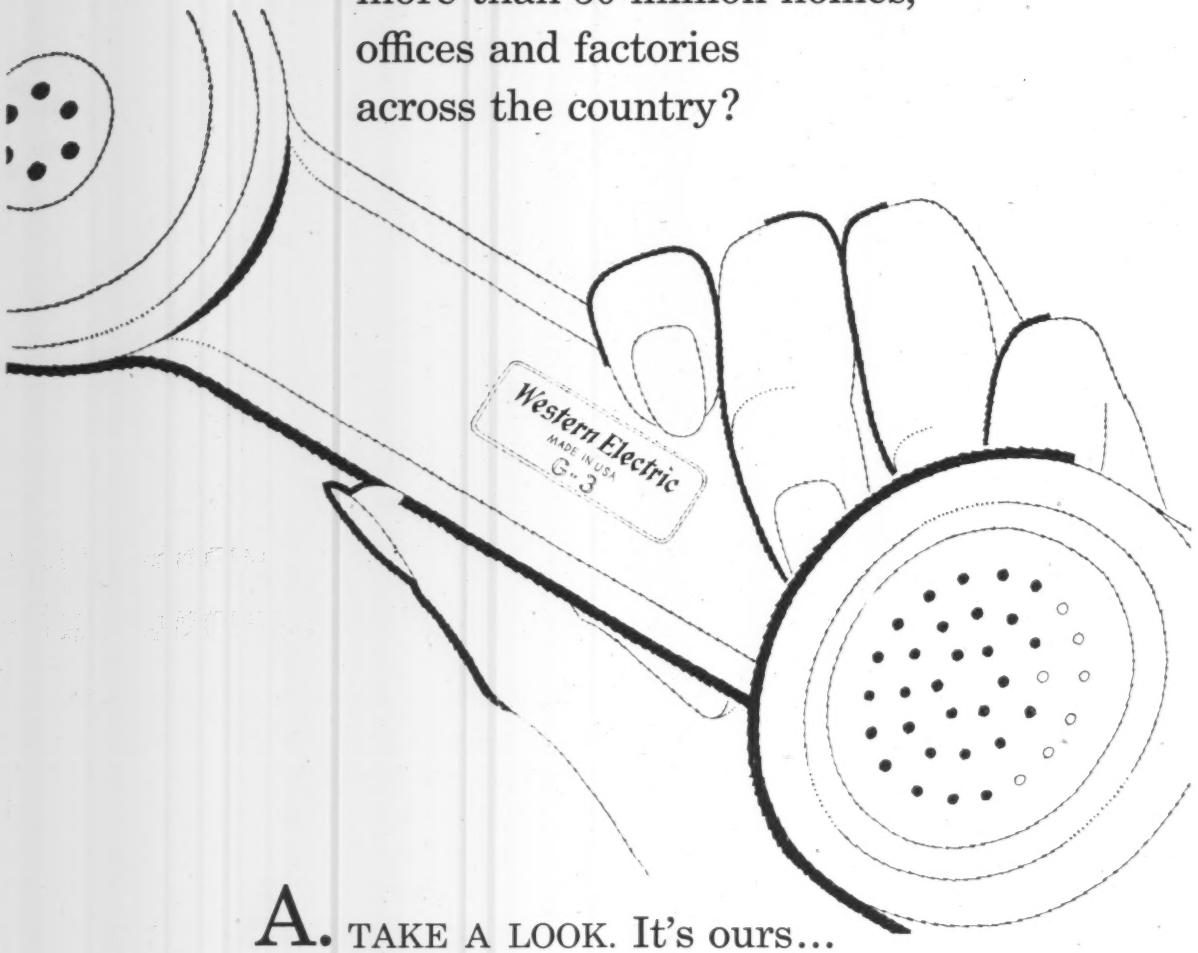


A full 3 feet wide and available in lengths up to 32 feet, Butlerib panels make short work of covering even the largest Butler buildings. The unique pattern of deep and shallow corrugations makes these the most rigid panels of their type.

Q. WHAT COMPANY'S NAME is in more than 50 million homes, offices and factories across the country?



A. TAKE A LOOK. It's ours... right on the handle of the telephones we make for the Bell System. It's our job to see that Bell telephone companies have what they need to give good service.

Western Electric

MANUFACTURING AND SUPPLY UNIT OF THE BELL SYSTEM

Your Stake in the MATERIALS REVOLUTION

MATERIALS PROBLEMS, the most crucial obstacles to technical progress, are being solved today on a scale and at a pace never before attained in industry.

America's missile designers, seeking an alloy half as heavy yet twice as strong as steel, don't need to be reminded of their stake in this virtual revolution in materials. But what about the great majority of manufacturers, those who make less glamorous gear? The steady improvement of their fabrication processes and lines of products is rarely stifled by the lack of some essential material. How can they profit from today's burgeoning variety and quantity of new materials?

Manufacturers may wait until they are forced by customer demand or stiff competition to work with new materials, or they may strive to get the jump on competition and anticipate customer needs by making rapid and effective use of industry's cornucopia of materials. Although the latter course well may entail increased capital investment and greater managerial skill, it is the only path to take in an era of expanding product lines (see DR&MI, January 1959, page 84) and rapid obsolescence.

Unfortunately, according to leading industrial observers, 90 per cent of American manufacturers maintain a defensive position towards new materials: they have to be pushed into using them. This inertia, which limits profits and sales volume, prevails despite the fact that today it is easier than ever before to employ new materials effectively.

Producers of these materials offer a wealth of free technical information, testing, and even design facilities to any manufacturer or constructor who represents a substantial present or potential market. The comparatively new materials industries, like aluminum, nickel, and plastics, have been offering such valuable free services for years in an effort to expand their markets. But now the suppliers of traditional materials are adopting similar tactics.

The hazard in all this free technical service is that the small manufacturer is likely to use it as a crutch. Instead of determining on his own which material best suits his needs, he may rely too much on the judgment of the supplier who offers the best service.

Although this technical service is

TAKING ADVANTAGE *of free technical service, R. L. Terrill, left, vice president, Spencer Kellogg & Sons, Inc., learns about urethane coatings from Dr. M. E. Bailey at the Allied Chemical Research Laboratory.*

COSTS *of materials can often be cut by new delivery methods. Here, a truck carrying two crucibles full of molten aluminum weighs in on its short haul between Reynolds Metals' Lister Hill plant and Ford's new casting plant at Sheffield, Ala.*

TOXICITY *of small beryllium particles necessitates an enclosed system exhausted (at right) through filters during fabrication as shown here at Nuclear Metals, Inc., Concord, Mass. To roll beryllium into sheets, it must be sandwiched between two sheets of mild steel, which are peeled off afterward. Beryllium represents an extreme example of the added costs of fabricating most new high-performance materials.*

an important factor in the increasing tendency to switch from one material to another, there are many other significant reasons for the present flux in materials use:

- New ways of delivering materials which cut the user's handling costs or enable the supplier to cut his price. An outstanding example is the new easily palletized interlocking ingot designed by Aluminium, Ltd.
- New fabrication techniques, such as spark machining, which reduce manufacturing costs of high-performance but hard-to-work materials. (It is important to remember that materials can either gain or lose strength and other valuable properties in fabrication. For example, the compressive yield strength of some steels is tripled by explosive forming.)
- Recurring shortages, violent price fluctuations, and the danger of dependence on uncertain overseas sources force manufacturers to seek substitute materials.
- Camouflaging of new materials to look like traditional ones in order to ease acceptance.
- The continuous development of entirely new materials of wide applicability, such as plastics.
- The rapid advance of coating, laminating, and material-blending technology, which has given many old materials a new lease on life.
- The trend away from the use of descriptive specifications and toward performance specs. As a result, a manufacturer has greater freedom to specify the most suitable material, rather than the traditional one, says D. J. McPherson of Armour Research Foundation, Chicago.
- A withering away of old prejudices against plastics in the metalworking industry. Although the big market for plastics will most likely always be in packaging, toys, and light consumer items, plastics are offering more and more competition to metals in heavy duty applications.
- Greater willingness of municipal officials to change building and health codes to enable constructors and manufacturers to use the latest materials. For example, health authorities are now evaluating plastic pipe as a replacement for stainless steel in milking machines.
- The overwhelming demands of the space age and the huge outpouring of money in military R&D which are stimulating "quantum jumps" rather than routine progress in materials.
- The increased availability of materials. The automobile industry, once hesitant to specify aluminum because of comparatively low capacity, today uses 125,000 tons a year.

Cost is the key

But the major reason for changing materials is, and always will be, *cost*. Cost here is computed on the final fabricated form of the package, part, or equipment, and not on a pound-for-pound basis. However, even on the latter basis, it is possible to get some valuable clues to cost-cutting respecification.

For instance, Deere & Company, Moline, Ill., has been substituting tough nodular (ductile) iron at 12.5 to 13 cents a pound for cast steel costing 25 cents a pound in some parts on the company's line of agricultural and construction equipment. The payoff on thousands of tons of heavy parts can be substantial.

Another good example of a cost-cutting respecification, to which initial material costs gave no clue, comes from Food Machinery and Chemical Corp. Aluminum doors first were used in FMC's big utensil-washing machines, but detergents and food particles soon began to corrode the doors so that they stuck in their tracks. FMC was plagued with service calls and complaints. Designers then specified wide Campco nylon for the doors. Not only were costly service calls eliminated, but the new doors cost only one-fifth as much in the final fab-

Cracking New Markets with New Materials

A change in material specifications has enabled makers of one major appliance, electric stoves, to capture 41 per cent of the annual stove market of 3,235,000 units.

Twenty-five years ago the electric stove was a rarity in American homes. Housewives found cooking by electricity unbearably slow because pots and pans could not rest directly on the fragile heating coil.

Then someone got the idea of encasing the coil in a strong metal and packing it with a compound that was an electric insulator as well as a good heat conductor. After various experiments, crushed magnesium oxide was selected as the insulator, and the unit was wrapped in a nickel-based alloy which retains its strength even at red heat. The new design was called the "Calrod."

ricated form, although molding nylon costs five times as much, pound-for-pound, as aluminum.

The tremendous cost-cutting and market-cracking advantages of sophisticated materials selection has caused leading industrial companies to set up programs for putting as many of the new materials as are applicable to work in their plants or products. Under these programs, information on new materials and new cost-cutting fabrication techniques for established materials is collected. All materials in use are periodically surveyed to consider, in the manner of "value analysis," worthwhile substitutions and standardization. Such a program creates, according to Frank L. LaQue, vice president for research and development of International Nickel, "a healthy atmosphere of dissatisfaction with present materials."

continued on next page

A Management Look Ahead

Here is a glimpse, based on extensive research and interviews with experts, of foreseeable trends in materials technology and their effects on products.

LIGHTNESS: The increasing use of lighter materials such as aluminum, magnesium, beryllium, plastics, honeycomb and sandwich construction, and foamed materials is inevitable. Military uses, of course, demand this quality, but commercial equipment and products also can gain many economic benefits from lightness.

Inside the factory, lighter raw materials require less manpower and less horsepower. Transportation costs, up to a point, are cut by lightness. If enough weight can be removed, air freight becomes practicable.

But the major reason for seeking lightness is the consumer's great bias in favor of "portability." Even if lighter materials don't make an appliance really portable, every pound taken off attracts more customers.

STRENGTH: Another way to achieve lightness is to make the material stronger so that less of it is needed. The best examples here are the new "T1" or "high strength" structural steels. Supporting structures for capital equipment can be lighter and cheaper because this steel is substantially stronger than low-carbon steel, and sells at only a moderate premium price. Metallurgists confidently predict that strengths of most metals will be doubled in about 25 years.

TEMPERATURE: The upper service limits of materials will continue to rise. For example, some experimental metallo-organic plastics have a service temperature of 900° F—a truly incredible leap over the previous high of 500° F. As chemists learn more and more about replacing the carbon atoms in plastic molecules with metal atoms, the service temperature of plastics will go up and up. (High-temperature performance has been covered in greater detail in an earlier DR&MI article, "Operation High Temperature," October 1958, page 38.)

COMBINATIONS: As researchers probe deeper into the nature of adhesion, industry will find out how to stick things together better and more cheaply. Not only will present laminated (see DR&MI, April 1959, page 103) or combined materials be improved as a result, but hitherto impossible combinations will become practicable. Lamination advances will make glass a major structural material in vehicles.

One combination that is attracting wide attention consists of metal-coated ceramic fibers compressed together to produce parts with the high impact strength of metals and the temperature resistance of ceramics.

CRYSTAL RESEARCH: Widespread research into the structure of crystals will pay off in greater strength and corrosion resistance in present metals and ceramics. Researchers are hoping to produce ductile ceramics and already have bent small crystals of fused magnesium oxide without shattering.

HIGH-PRESSURE RESEARCH: Research at unimaginable pressures of millions of pounds per square inch—combined with high temperatures—has already created one valuable commercial product, synthetic diamonds, and one new material, borazon. Continued efforts should lead to other new materials or stable forms of materials, such as metallic gases. What wonderful properties these dense new forms of materials may exhibit cannot be predicted, but some researchers are willing to go out on a limb and suggest that gases in dense form could solve many fueling problems.

PLASTICS: In the past ten years, plastics production rose from 1.2 billion pounds a year to 4.5 billion pounds. The next decade will see an even more incredible rate of increased plastics production.

Copolymerization and nuclear radiation techniques will enable researchers to "design" plastics exactly to customer specifications. The result will be an overwhelming number of different plastics, making the technical man's job increasingly difficult. Design engineers will have to rely on computers to help them pick out the best material for a particular application.

One factor that has hindered the use of plastics in building is their questionable durability. How can anyone tell if a plastic will last the twenty to 40 years required by the construction industry if the plastic was invented only five years ago? One answer is more accurate accelerated life tests. But the durability factor also is being affected by the growth of modular construction—a building technique which allows for the easy addition of extra space as it is needed and the contraction of space when it is no longer required. Plastics have the obvious advantage of light weight in any such expansion-contraction system, and durability becomes less important.

AVAILABILITY: As industry's appetite for materials grows, and the more easily tapped raw materials sources are exhausted, suppliers will have to search for new sources in remote areas like Antarctica. Finally, they will be forced to mine the ocean's bottom. In a sense, undersea mining is already a reality: oil producers have been able to tap the ocean's floor more than 63 miles off-shore.

PRICES: Since cost is far and away the most important criterion in picking a material, price trends must be evaluated. In general, the prices of traditional, long-established materials will continue to rise as labor costs go up. New materials or new forms of old materials are generally introduced at a higher price to cover heavy development costs. Therefore, they offer the greatest opportunity for price decreases as demand stimulates volume production. For example, Du Pont's Mylar, introduced in 1951 at $3 a pound, is now $1.80.

As the materials larder converts from staples to a staggering number of special alloys and formulations, copolymers, laminates, and foamed substances, the natural effect will be higher prices—all the more reason for picking wisely.

To launch such a program, a fact sheet is prepared on every material now purchased. Questions to be answered include: When and why was it originally specified? Has the design of the part or its function changed significantly? What materials do competitors specify in the same situation? What other materials are available with similar properties? Have fabrication procedures changed much in this field? What customer complaints have been received about this product? Has the price changed much since the original specification?

Customer-supplier teamwork

These alert companies often call on suppliers for advice or to request that new varieties be developed for their special uses. They also consult other free sources of information such as the Defense Metals Information Center, Battelle Memorial Institute, Columbus 1, Ohio (see page 103, April 1959, DR&MI).

Despite all the technical service they offer, materials suppliers still need the orientation they get from customers. According to Dr. V. V. Lindgren of American Cyanamid, materials suppliers should be brought into a product or process development project as early as possible. Company secrets are safe, Dr. Lindgren asserts, because materials suppliers know they must keep their lips buttoned or lose their customers.

Where materials suppliers can't meet specifications, a few dozen large manufacturers have set up their own materials development and production facilities and even have gone into profitable competition with suppliers. Westinghouse, for example, has done this with notable success in turbine alloys and magnetic materials.

These measures have produced some startling savings, but even if no immediate improvements result, companies which have tried such programs say there has been increased awareness of the profit-making possibilities in switching materials.

Needed: materials specialists

Some personnel changes also have resulted from the materials programs. One very fast and comparatively inexpensive way to sharpen the materials orientation of a metalworking company is by hiring engineers with heavy experience in the aircraft and missiles industries, says John L. Everhart, technical editor of *Materials in Design Engineering*. These engineers, familiar with new fabrication techniques and materials, aren't biased in favor of older materials.

Some companies, like Minnesota Mining & Manufacturing, hire or train materials specialists for their product or process design teams. They also keep track of the enormous outpouring of information on new materials.

More and more large companies are staffing their R&D laboratories with physicists who have experience in solid-state physics. This is the science from which the new metals and ceramics of the future will evolve.

Spending money to save money

Considerable money and effort must be expended, however, to realize the cost-cutting and product-improving benefits of new materials. Although they often cut production costs, some require added investment in production facilities. For example, titanium must be welded in an inert gas atmosphere to exclude undesirable hydrogen, oxygen, and nitrogen.

New demands also are placed on purchasing, engineering, testing, and quality control. Although expert knowledge in materials often can lead to cost-cutting standardization on one material instead of two or more, the general effect of new materials is to increase stock inventory. For example, the first plastic, celluloid—which was invented 91 years ago—has not been pushed out by the 27 other latter-day families of plastics.

"Make-or-buy" policies often are affected by the specification of new materials. In many instances it's cheaper to subcontract fabrication of a part in some new material, at least until the material has definitely proved itself. "Subbing" of complex zinc die castings is a good example.

Sometimes the repercussions of a material respecification are widespread and unpredictable. For example, fabricating some of the new high-performance metals often calls for redesign of cutting tools.

Evolutionary innovation in materials is assuming the nature of a continuous revolution. Profit-making opportunities for cutting production or maintenance costs, or for product redesign, improvement, and restyling through use of these new materials grow more numerous each year because they supplement, but do not supplant older materials. To managements intent on building profits, no material is sacred. These companies are constantly jolting their technical departments into taking advantage of the full range of old and new materials.

—MELVIN MANDELL

How New Technology Changes Materials Picture

THIS JET *is hotter than the sun's surface. Stainless steel, fed from the right into the flame in the form of wire, is coated on aluminum. This new Linde Plasma Arc Torch can also be used to build up useful shapes from powders of hard-to-work refractory metals such as tungsten and tantalum.*

NEW *processing advances can give new economic life to familiar materials such as wood. Here, Kalman L. Pell of the Industrial Research Division, Washington State College, checks on a new fast-laminating machine that turns out weatherproof beams in only minutes instead of days.*

CORPORATE SIZE
as Company Presidents See It

THE PRESIDENTS' PANEL

REPORT NO. 12

Is small business being stifled by the corporate giants? Here's important evidence on this question, straight from the presidents of 104 big and 121 smaller industrial companies participating in a new DR&MI survey.

SUCCESS FORMULA . .	***Money plus planning. Here's where small companies falter.***
TOUGH BUT HEALTHY .	***That's the little fellow's verdict on big business competition.***
RIGHT TO GROW	***Few small companies favor shackling big concerns by legal limits on size.***
GROWTH TARGETS . . .	***For large industrials, 46 per cent more sales by 1964; for small, 69 per cent.***
BIGGEST THREAT	***Large and small agree: it's the heavy hand of Uncle Sam.***

AMERICA'S FIRST—and for a long time, only—million-dollar corporation flopped five years after its incorporation. Now little more than a footnote curiosity in business history, the 1791 Society for Useful Manufactures was based on some ideas that time, technology, and professional management have since proved sound and workable. So workable, in fact, that today the DUN & BRADSTREET *Million Dollar Directory* lists some 21,000 such concerns, thriving in a total business population of about 4.3 million enterprises.

But the conspicuous success and growth of big companies have created new problems and raised some serious questions about size and its implications. Can small business prosper among the corporate giants? Is bigness destructive? Should legal limits be set on size—or on the share of the market any one company should be permitted to control? Should the Government actively restrain or break up the biggest companies and offer a helping hand to small business?

To get business's own answers to these key questions of size and survival, DR&MI surveyed two groups of industrial company presidents—104 heads of companies averaging $205 million in annual net sales, and 121 heads of companies averaging $2.3 million in annual net sales. The larger companies are all regular participants in the Presidents' Panel. They employ up to 120,000 people and average more than 11,000 employees apiece. The smaller sample was selected on a scientific random basis from companies, primarily industrial, employing from 75 to 150 people.

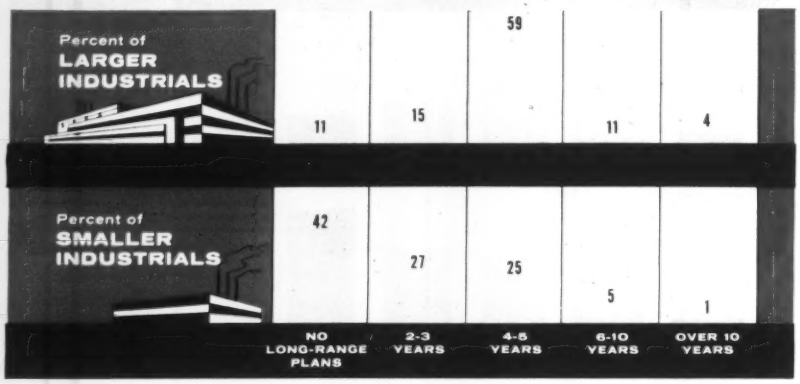
Big and small business—the responses of the 225 presidents in this double-barreled survey indicate—are not by any means at each other's throats. They share similar growth ambitions, management headaches, and a willingness to live and let live. Smaller business wants unlimited opportunity to grow, and it thinks its big competitors should enjoy the same right. As a rule, small business regards the biggest company in its own industry as a constructive factor, providing technological guidance and often broadening the whole market for all.

Obviously, big business has the edge in growth capacity. It has unquestioned advantages in mass production at lower unit cost, establishing price patterns, research, capital resources, and management time and

talent needed for long-range planning.

In some respects, this last advantage may be a crucial one. Findings of this and other DR&MI surveys strongly suggest that planning has a lot to do with successful company growth, and—as every company that does it knows—formal long-range planning takes time and top executive manpower. One of top management's most common complaints is that current operating problems absorb management energies that should be spent on planning. Smaller companies, no doubt, feel such pressures more intensely. But many are jeopardizing their own growth prospects by failing to give enough organized attention to the future.

HOW FAR AHEAD IS LONG-RANGE PLANNING DONE?



No blueprint for growth

No long-range planning (beyond the minimum annual budget) is done by 42 per cent of the smaller industrial companies in the DR&MI survey, as against a mere 11 per cent of the larger. And only 25 per cent of the smaller companies, compared to 59 per cent of the larger, make formal five-year plans—the generally accepted minimum for sound long-range planning. Yet 93 per cent of the smaller companies *want* to be bigger five years from now than they are today. And they actually expect to increase sales 69 per cent over the next five years.

Well-laid plans are no guarantee of company success in the far future, but they do measure the risks of alternate possible courses of action, and they usually tend to exert a steadying effect on the company in all kinds of economic weather. Faster technological change, and the tougher competition it produces in innovation and product improvement, puts a high premium today on sound planning. And the time lag between initial research and product application itself forces management to plan further and more carefully ahead.

What stunts their growth?

There are some real limits for most business concerns on how much they can grow, although a sizable minority of the surveyed presidents—43 per cent of the big company men and 16 per cent of the smaller—see none for their own companies.

The most serious roadblock to growth, say 28 per cent of the small industrial presidents, is lack of money. In fact, financing—long-term loans, equity capital, and working capital—is seen as the No. 1 growth obstacle. There is a general conviction among the smaller companies that a dollar shortage, as they describe it, explains most of their other deficiencies—inadequate or nonexistent research and development, obsolete facilities, lack of management talent.

Lack of management talent is itself a growth problem, though not one unique to the smaller industrial company. About one in ten companies of both survey groups mentions it. Imagination, vision, and management's ability to absorb new problems are apparently in short supply for all companies, regardless of size.

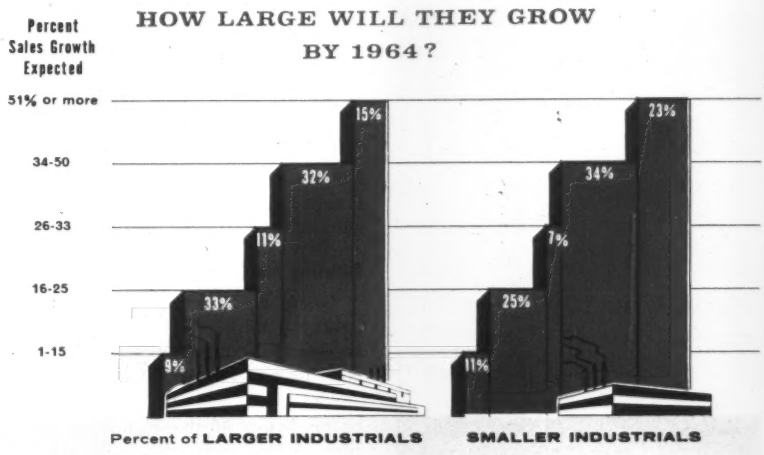
Available market is another growth inhibitor, in the eyes of 23 per cent of the big companies and 21 per cent of the smaller ones. Both groups feel the pressure to diversify or create new products to widen the potential in static or saturated markets, or to create new ones. Another common complaint from all companies: high taxes and creeping inflation, both eating into the company's re-investment dollar. And there are growing complaints about the price competition from imports.

These are the major problems that loom ahead on the growth horizon. But there are a few minor differences of viewpoint between the big and small companies on other problems that could severely limit growth. The big companies naturally feel they may be handicapped by increasing anti-

About the Survey

In this survey on corporate size, DR&MI asked for facts and opinions from the presidents of two groups of primarily industrial companies. One hundred and four companies participating in the Presidents' Panel comprise the larger industrial group. A random sample of 121 smaller companies, with 75 to 150 employees, comprise the second survey group. On the average, the larger industrials are about 100 times as big as the smaller industrials. Here's how the two groups compare in other respects:

	Typical large company	Typical smaller company
Annual net sales	$205,000,000	$2,310,000
Net profits	5.2%	4.2%
Annual R&D outlay	$ 3,500,000	$ 52,500
% of R&D outlay to sales	1.7%	2.3%
Number of U.S. plants	18	1
Number of stockholders	16,250	25



trust activity. And some foresee, far ahead, depletion of present raw materials resources.

A few smaller companies say their future growth may be stifled chiefly by inefficient or poor-caliber sales staffs and inadequate distribution systems and methods. And a substantial minority of the small companies say high transportation costs will severely slow down their growth.

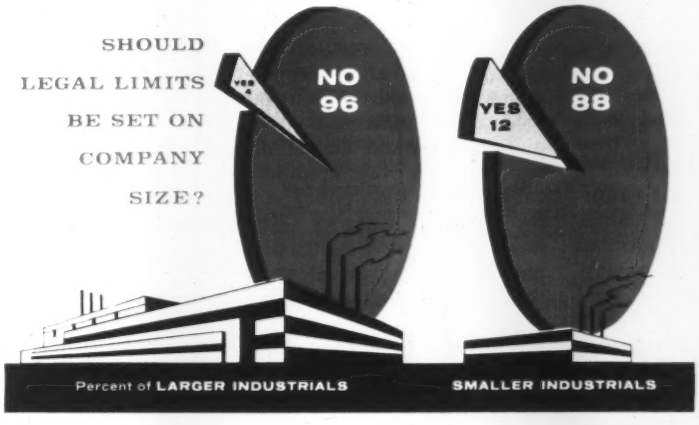
How to coexist profitably

Competitive pressures from big business are certainly a growth deterrent for many small companies—but far from a fatal one. Three-fourths of the smaller companies ascribe specific competitive pressures to big business, but feel they can live with these and exploit their own unique abilities to combat them. The other quarter of the group denies that big business is its chief competition. Two typical comments from this latter group are: "Big business is our customer, not our competition" and "We have more competition from small businesses than from big business."

Chief among the big-business competitive pressures that do trouble small companies is pricing, along with reciprocity and related practices. One smaller company had been so badly pinched by price competition that it went to court. But the great majority meet competition by exploiting the small company's traditional strength: specialization. Two comments epitomize this strategy: "We try to concentrate on short runs and business not profitable to others" and "We specialize in chink-and-cranny business which big businesses find difficult to handle efficiently." This, say the small companies, also helps meet the frequently mentioned competitive threat of big business's lower mass-production costs.

Among the most difficult competitive threats to meet, say the smaller company presidents, is big business's better distribution and national promotion. Two companies have found a solution to this problem by joining with four or five other companies in a joint selling and promotion company for national advertising and distribution.

Among other tough competitive problems mentioned by the smaller concerns are full-line product competition, imitation of successful products created by the smaller company, labor-cost patterns beyond small business's capacity to pay, old-line prestige, and vast research facilities that the smaller company simply can't afford. To some of these competitive pressures there is no direct answer. But personal service to the customer, like product specialization, is one area where the smaller business believes it can excel.



Is big business destructive?

The common assumption that bigness endangers the survival and growth of the smaller company is not shared by most of the smaller-company presidents answering the DR&MI survey. Seventy-five per cent of them explicitly say that the leading company in their industry is "a constructive factor." Of the remainder, 20 per cent call its influence destructive, and the remaining 5 per cent shrug off the question with comments like "Sometimes one, sometimes the other—the same as most companies."

Those who consider the leading company in their industry a destructive factor put the blame mainly on unfair pricing. Several companies mention that the recession intensified price warfare. Some presidents call the big companies destructive when combination deals or control of raw material sources gives them the competitive edge, or when the big company occasionally floods the market with an inferior mass-produced product and disrupts normal sales channels.

But these views are outweighed more than three to one by those who believe that the leading company in their industry is a constructive influence, usually on four counts: "realistic" pricing practices, product quality, technological leadership (and sometimes direct help to the smaller company), and effective advertising and promotion. There is a widespread conviction among the small concerns that "any good product helps the whole industry." National advertising, many smaller companies say, expands the market for every supplier—especially when, as one man wryly suggests, "possible monopoly charges cause big companies to limit their percentage of the market."

continued on page 68

When Should You Make It Yourself?

ROY CHAPIN, JR., *Executive Vice President*
American Motors Corp.

Few companies can afford to decide vital make-or-buy decisions on the basis of cost-comparison formulas alone. Long-term company goals are involved, too. Here's a rundown on the practical, yet far-sighted, approach that has been evolved by American Motors.

THE do-it-yourself fever is infecting industry's front office. Let a supplier fumble, and someone is likely to sharpen a pencil on a make-or-buy cost analysis in hopes of proving that "anything they can make, we can make cheaper."

The maturity of our economy encourages this pardonable pride. Some companies, and indeed whole industries, believe they are pushing the limits of the market or their share of it. Instead of finding new things to sell their customers, they are tempted to expand backward into the business of their suppliers.

The well-publicized squeeze on the budget which makes do-it-yourself attractive to fixed-income families has its counterpart in the many industries whose costs are rising faster than they can raise prices. Rising sales volume at lower unit profit can turn a manufacturer's fancy to the opportunities in the respectable volume of parts and components he finds himself buying.

A change of the economic wind could easily reverse this trend and send manufacturers looking for suppliers to take on production headaches.

No single approach to the problem is, of course, "right" for all industries, for all companies in a single industry, or for any one company with regard to all items or even a single item at all stages of its growth. The make-or-buy decision is essentially complex because it is so "iffy," but it can be dangerously over-simplified if it is influenced by the attitude of the executive in the cartoon who disposes of a "fresh" subordinate by shouting: "There's no *reason* for it, I tell you! It's a policy!"

The "either-or" decisions

Every manufacturer chooses to buy some things which go into his product and to make others. Whether examined or not, some segment of his requirements could almost always be handled either way. Tradition, historical accident, and "policy" often limit the either-or category. Among the many reasons why the telephone company makes its own telephone sets is its status as a natural monopoly. Patent positions contribute to the high proportion of components bought by radio makers.

Automobile makers, whom I know best, differ widely in make-or-buy policy. One reason, of course, is the great number and high complexity of the components which go into an automobile. A cyclical up-and-down market for their product has forced the industry to relative sophistication in forecasting requirements, and rugged competition has sharpened its cost calculations.

Buying habits of car makers

Normally, however, automobile makers neither produce their own standard parts (nuts and bolts) nor run make-or-buy cost analyses on these common items. The strenuous competition of the hundreds of suppliers of these staples guarantees that the price will be right. Most car manufacturers buy some proprietary items, such as instruments, radiators, carburetors, and so on, which require special manufacturing facilities and skills. No car maker now is manufacturing its own tires or upholstery cloth, although some have at various times invaded other industries. The Ford Motor Company, for instance, at one time had a tire plant and now manufactures glass and steel.

All of today's car manufacturers make the major parts characteristic of their models. It is interesting that none of the many enterprises which have tried to make automobiles by merely assembling purchased components has survived. At American Motors Corp., we make our own bodies, engines, axles, and suspension systems. We would not want to buy major components like these even if they could be made by a supplier.

Making the profit test

The factors which go into any make-or-buy decision may be financial, strategic, or operational. They may be long-term or short-term. They may even be political, in the sense that concentration of economic power involves issues of public or national policy. But every factor must be considered in terms of its direct or indirect influence on future profits and future return on the company's investment.

The cost comparison is easier to make when the component under study can be made with existing facilities. In the automobile industry, and in appliances too, a percentage of components in this class may be bought regularly simply to keep a continuing check on comparative

costs to evaluate "make" decisions.

If the part is a simple one—for example, a bracket—the make-cost analysis can be run out by one man in an afternoon, and blueprints sent out for bids can be returned with a firm buy quotation in a week or less. The complete costing of an axle, on the other hand, might take weeks.

A buy-cost analysis that is really fair can be a complicated job, especially if you attempt to put a figure on many of the marginal factors that go into it. If you are planning to make a high-value component formerly bought outside, it is worth considering the impact on overhead and making allowance for it. On the other hand, many of the factors that may go into an elaborate accounting analysis are too small to make much difference, and the very complexity of the calculations can give a false sense of security. Frequently, the most important variable is the least subject to measurement.

Figuring the cost

In our compact organization, we prefer to keep the figure work simple and rely on the manufacturing experience and judgment of men in our company who have spent their lives making automobiles and appliances. In figuring what it will cost us to make a part, we add the cost of material, standard labor costs with an allowance for labor variance based on our own records, and manufacturing burden, which in our case covers tool amortization, equipment depreciation, supervision, accounting, engineering, and all other nonproductive costs incurred by the plant. We then compare this with actual quotations from suppliers.

Evaluating the variables

The next—and most vital—step is evaluating these figures. If we have the facilities, are they best used to make this particular part? How likely is it that we might need this space and equipment to handle future peak demand for other components we have determined we should make? There must be a margin for normal cyclical changes in plant operations.

A slightly higher price to a supplier can sometimes buy valuable time in a period of changing demand. We were able to postpone for a year a decision to invest in facilities for making upholstery and interior trim for one model by buying these items at a higher price than we could have made them. As it turned out, the facilities we would have bought to make these items ourselves were not needed in that location, so we wound up ahead of the game.

More assumptions have to be made when the decision to make would require additional facilities or involve unfamiliar manufacturing techniques.

In that case, it is necessary to evaluate the new equipment needed. Is it general-purpose or, as is more often the case in our industry, special-purpose equipment that might freeze us to the "make" decision? How long will it take to amortize its purchase

continued on page 84

Weighing the All-Important Intangibles

All make-or-buy decisions must take certain vital intangible factors into account along with cost-comparisons. Here are the important questions management should consider in determining how a make-or-buy decision will affect the company's profit and return on investment.

1. How important is insurance against failure of a supplier to deliver? Material shortages and labor trouble can cut off any maker, whether he is the ultimate user or a separate supplier company. A second source is often as good protection of continuity of supply as going into the business yourself. If a second source does not exist, however, it may be worthwhile, as insurance against interruption in supply, to make it yourself.

2. Can the existing management team and the administrative services included in overhead handle the make operation without incurring hidden costs? The danger is not all on the make side. Supervising suppliers or finding alternate sources when they dry up can be as great a generator of added overhead as the management of additional manufacturing operations. Determining the limit to which existing general and administrative expenses can be stretched is often guesswork.

3. How much of the risk of obsolescence are you willing to take, and how much of it should be shared with suppliers? The more complex the product, the faster-moving its technology, the greater this risk becomes. It is an important, even overriding, consideration in electronics, aviation, and automobiles. A few years ago, when advances in transmission design began to come rapidly, we stopped making our own transmissions and deliberately bought outside at a higher price. The decision not only has saved us the considerable investment in new equipment that would have been necessary to keep up with the best ways of making standard transmissions, but has eliminated the risk of being left with obsolete facilities in the event of a radical new development in transmission design. As a specialist in transmissions, the supplier is better able to keep up with new developments and to spread the risk of obsolescence over many users. The question boils down to this: Who can watch the technology involved in the component more efficiently and economically—the manufacturer or the supplier? And how likely is the development of a radically different component or process—fuel injection in place of carburetors, for instance—which would make existing facilities useless?

4. How will relations with suppliers be affected? This consideration of morale goes far beyond the suppliers of the component under study. All suppliers may wonder when the ax will fall on them. At American Motors, we believe that supplier cooperation has a real cash value. A loyal supplier can save a manufacturer money in making quick design changes, in expediting shipments to cover an emergency, and in assisting in the development and application of new ideas. For example, the unitized body construction used on all Ramblers was developed in conjunction with the Budd Company—a major source of body components.

5. Finally, how big does the company want to be? It is quite possible for a company to integrate operations which do not add to profit in the mistaken hope that, inherently, the bigger the operation, the bigger the profit. Size exercises a charm all its own.

- ***Much faster product and equipment obsolescence***
- ***Industrial growth dominated by electronics***
- ***Enormously expanded use of plastics***
- ***Industrial materials designed to order***

Top Scientists Look 10 Years Ahead

COMPACT fuel cells that produce electrical power directly with incredible efficiency. Fully automated processes turning out a myriad of products. TV programs and messages relayed around the globe by satellites. And bigger problems than ever before for industrial management.

These are just a few of the challenging prospects foreseen by sixteen of the world's most distinguished scientists and scientific administrators in an exclusive DR&MI survey of technological advances industry can expect within the next decade.

Science, the survey reveals, is creating wonderful new tools to sharpen managerial judgment, control operations, speed decisions, and take the guesswork out of long-range planning. Computers, automatic controls, rapid intercontinental communications, and compact memories of vast capacity are being devised to make business more responsive to the changes generated by a vastly more complex industry and by a growing population.

Only one roadblock to the continued technological advance is foreseen. Allen Astin, director, National Bureau of Standards, raises the pessimistic possibility that unless industry spends more for basic research, the flow of new technology in the next ten years will not be sufficient to meet the need: "Despite these recent systematic accumulations of data, American industry will probably be more critically hampered by the lack of specific information than ever before. Industry and technology will very likely demonstrate that our accumulations in the past five years have not kept pace with the desired rate of growth."

Electronics, the scientists predict, will become the biggest American industry in the next ten years, as the demand grows for new electronic tools to help management keep pace with scientific discoveries and new electronic products for defense and civilian markets.

The scientists, a diverse group of physicists, chemists, and metallurgists, also foresee the following important advances, which will greatly affect industry in the coming decade.

- Enormously expanded production and application of plastics, with the possibility that a different plastic will be invented specifically for each substantial application.
- Increasing use of chemicals to control the growth of crops, to make plants more resistant to disease, drought, and cold, and to improve quality and yield of farm products.

continued on page 58

Participants in an Exclusive DR&MI Survey of Scientists

Allen V. Astin, director, National Bureau of Standards

Walter H. Brattain, Nobel Laureate, Bell Telephone Laboratories, Inc.

Wernher von Braun, director of U.S. Army missile development

Krafft Ehricke, assistant to the chief engineer, Convair Division, General Dynamics Corp.

Lawrence Hafstad, director, General Motors Research Staff

Theodore von Karman, scientific adviser to NATO; chairman, Missiles-Jets & Automation Fund

Augustus B. Kinzel, metallurgist, vice president research, Union Carbide Corp.

Herman F. Mark, director, Polymer Research Institute

Guilio Natta, inventor of polypropylene, Polytechnic Institute of Milan; consultant, Montecatini

Simon Ramo, former chief scientist of the U.S. Air Force space program; executive vice president, Thompson Ramo Wooldridge, Inc.

Paul L. Salzberg, director, Central Research Department, E. I. du Pont de Nemours & Company

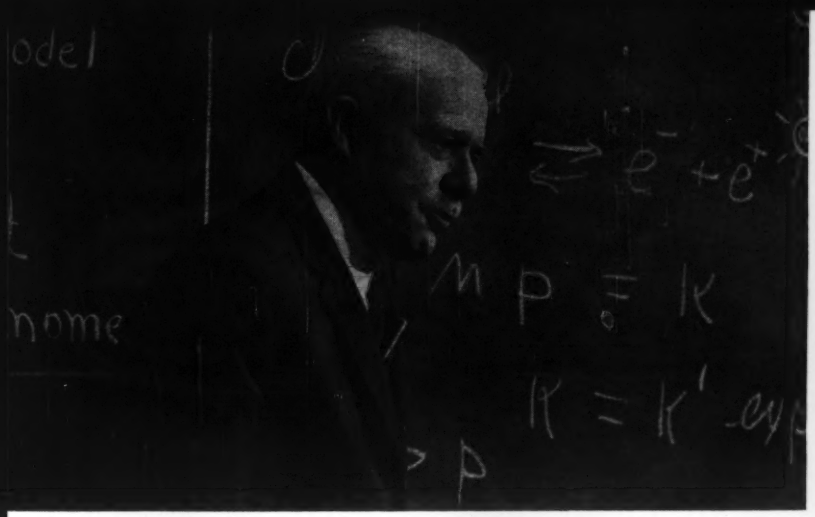
Claude Shannon, formulator of information theory, professor of mathematics, Massachusetts Institute of Technology

C. Guy Suits, director, General Electric Research Laboratory

Charles H. Townes, inventor of the "Maser" atomic clock, professor of physics, Columbia University

Edward T. Thompson, former director of the U.S. Navy Ordnance Test Center; consultant, Norden Division, United Aircraft Corp.

Vladimir Zworykin, inventor of the iconoscope, honorary vice president, RCA



Brattain:

"Advances in physical science present the possibility of almost complete control of our living and working environments. The really big question is: do we have the intelligence to use this knowledge for our mutual benefit, or are we just building another Tower of Babel?"

Suits:

"Availability of an unlimited supply of the hardest material—man-made diamonds—will revolutionize many industrial operations."

von Braun:

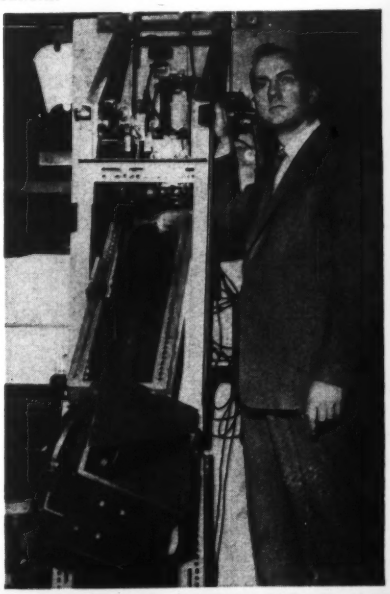
"Miniaturization of electronic equipment will lead to automation in areas which previously could not be automated for reasons of cost and weight."

Ehricke:

"Satellites will relay messages and TV programs, monitor weather, and help to navigate ships."

Townes:

". . . controlled production of transistors . . . developments in rocketry . . . higher frequency commercial long-distance communications."



Natta:

"In less than ten years, industrial consumption of one of the new plastic discoveries — polypropylene—will be double that of any plastic in use today."

von Karman:

"Scientific advances will result in new materials with resistance to extremely high temperatures, corrosion, radiation, and so on."

Hafstad:

"New semiconductor developments will create a myriad of new business opportunities in the electronics field and the industries it affects."

Ramo:

"Industrial equipment of the future will be based on high quality, complexity, and high fraction of newness in the sense of rapid application of recent scientific discoveries."

• New fibers and new ways of finishing natural fibers to clothe mankind and perform many industrial chores, such as insulation.

Although none of the scientists doubted the scientific value of our space program, there is no agreement as to its commercial practicality—and Claude Shannon of Massachusetts Institute of Technology even doubts its military value. Significantly, these doubts also are prevalent among laymen, who, according to a new University of Michigan survey, generally would prefer to see the money spent on medical research instead of space ships. However, Krafft Ehricke, the famous space scientist, is convinced of the direct commercial value of satellites—in ship navigation, intercontinental relaying of messages and TV programs, and weather forecasting.

The scientists are sure that we will have enough power to energize these wonders in addition to supplying the expanding power requirements of present industries. Some of those surveyed speak glowingly of the fuel cell, a "battery" that converts a fuel by oxidation into electrical energy. Du Pont's Paul L. Salzberg cites the possibilities of "silicon cells that convert sunlight directly to electrical energy" (they've kept our first satellite's transmitter going for fifteen months). C. Guy Suits of General Electric and Lawrence Hafstad, noted atomic scientist, stress thermionic generation.

The pressure of accelerating obsolescence, coupled with increasing production lead times, will call for more management skill than ever before. The missile industry already operates under such pressure. Simon Ramo, of Thompson Ramo Wooldridge, Inc., a leader in missile technology, has this to say about the task all industry is facing:

Civilian industry in the past period has been dominated by "product lines" and by large-scale production of relatively simple and relatively old items. Of course, an automobile is far from simple. But it is a simple machine when compared with the highly technical military weapon systems of the future. Automobiles are based on principles that we have learned well and gradually. The systems of the future will be based on high quality, high complexity, high fraction of newness in the sense of rapid application of recent scientific discoveries, relatively low volume of production, and high cost. Industry is now, and for some years will continue to be, engaged in the changeover to the new, highly technical age.

To cope with this new technical age, the scientists say all companies, even those outside of manufacturing, will have to upgrade their technical resources. They will require higher-caliber brainpower (specifically in the field of solid-state physics) and the latest scientific instrumentation.

But in its efforts to exploit the scientific explosion of the next decade, business can't afford to forget that the ultimate customer is mankind and that the success of every company will still depend on the skilful management of human beings. —M.M.

Shannon:

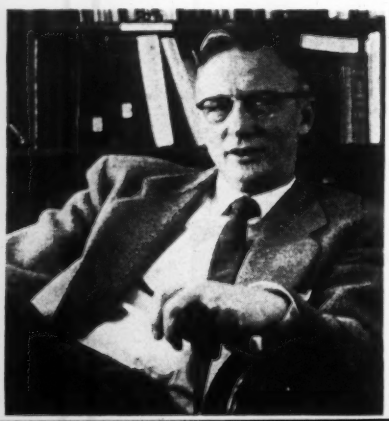
"Simple computers will be making routine decisions in the home by the end of the next decade."

Astin:

"In the next ten years new products, materials, and processes will come into being, and older ones will be improved. Last year's massive collection of IGY information should lead to new minerals exploration."

Kinzel:

"The fuel cell—a hundred-year dream—has only recently become a reality. Such a battery will conceivably convert a fuel by oxidation directly into electrical energy with 100 per cent efficiency."



Wall Street firms are putting out the welcome mat for the well-managed smaller company with a long-term financing problem.

Equity Financing for Smaller Businesses

H. STANLEY KRUSEN

Partner, Shearson, Hammill & Co.

NOT LONG ago the Higbie Manufacturing Company, a small Detroit manufacturer of steel tubing and fishing reels, found itself—almost overnight—in real financial trouble. A fatal illness had abruptly ended the successful career of its president and founder, Carlton M. Higbie. The bulk of Higbie's estate was invested in company stock—and his son, the new president, had to raise cash for the estate. The company was listed on the American Stock Exchange, but it had only 250,000 shares of stock outstanding and had incurred substantial bank debt.

How could this company, interested in expansion, be relieved of the necessity of paying off a relatively large debt in a short time? An investment firm solved the problem by negotiating a $750,000 long-term insurance loan which not only paid off the short-term bank debt and preferred stock, but provided the company with vital added working capital. Simultaneously, it arranged for sale of 60,000 shares of stock to the public to satisfy the needs of the estate and to provide new capital. Higbie Manufacturing now has its financial house in order and has been able to build a new plant and develop a major new product line.

This kind of assistance represents a significant and relatively unnoted departure from precedent. Until recently, large Wall Street firms have felt that the prerequisites for public financing of a corporation were a net worth of at least $5 million, a financing problem which would involve a minimum need of the same amount, and a record of consistent earnings and sales. Worthy smaller companies which did not fit these specifications had difficulty in getting Wall Street's attention.

Traditionally, of course, the "little fellow's" worst competitive handicap has been the financing problem. Often he can compete effectively with larger companies with respect to products or service. But when it comes to competing for money to grow on, he frequently finds himself in trouble.

Today he needs that money badly. Wall Street and Washington agree that the booming stock market and the wave of business expansion expected over the next decade presage a vast growth in equity financing of smaller companies. Yet it has been equity financing that has been hardest for the smaller business to arrange.

By comparison, short-term loans are no worry. In recent years, these have been relatively easy—and cheap—to come by. (They are generally restricted, however, to secured loans for working capital and are not ordinarily available for expansion of fixed assets.)

Long-term and permanent financing has been a horse of another color. Many smaller business men have failed to understand its exact role in their over-all financial set-up. They don't have a clear picture of the advantages of long-term financing or

Size Up Your Prospects

Does your company fit the framework below? It probably should if you're considering your first equity financing.

- **Good competitive position in product performance, manufacture, and sales**
- **A franchise in product, patents, or product development indicating long-term company growth**
- **At least a brief record of sales and earnings. Even a growing company should be past the promotion stage**
- **Well-rounded management, back-stopped by competent younger replacements**
- **Good financial management and good bookkeeping**
- **Competent accountants familiar with SEC practice**
- **Skilled and experienced lawyers**
- **Good commercial banking relationships**
- **Reasonably harmonious labor relations**
- **Management who own a sizable chunk of the company**

Wall Street investment bankers tend to steer clear of one-product companies or companies dominated by one man; "fad" products, like leather coats and hula hoops; and companies with obsolescent plant facilities or low profit margins (particularly in fiercely competitive industries).

how to go about getting it. They are overawed by the assumed high cost and technical complications of the step. And often they fail to recognize the appeal their enterprise has to the investor.

The commercial banker, too, hasn't always taken into account the long-term needs of his small-business customer. As a result, the managements of many growing companies have been involved in an endless and sometimes futile struggle to get out of short-term debt. Often they find their long-term growth stultified by limited resources.

No less a handicap has been the impact of tax laws which have tended to prevent the internal generation of sufficient capital to meet the needs of the smaller business. High tax rates have made it less costly to borrow than to obtain equity financing. This has posed a dilemma for sole proprietors and closely held companies: Sale of equities seems too costly, while borrowing involves mortgaging of assets and committing of future income.

Today, however, a growing number of investment bankers are finding means of providing capital directly and economically to smaller businesses through public participation. Indeed, in the past few years, certain Wall Street firms have been quietly channeling a major part of their efforts in this direction (see below).

The attractions of equity financing are increasingly evident to smaller companies which have watched the fluctuations — mostly downward — of the bond market during 1958. Because of the Treasury Department's refinancing problems and the inflationary bias in our economy, the investment attractiveness of bonds has been maintained only by increasing the interest rate. With a renewal of strong inflationary psychology in the stock market and in Washington, the advantages of common stocks stand out in bold relief. Rising stock prices offer management one of its most

They Went to Wall Street

These case histories exemplify some of the ways capital is being made available to smaller businesses on satisfactory terms:

Polaroid Corp.: Edwin H. Land was a young New England scientist with an idea but no financial resources. The partners of Kuhn, Loeb & Co. believed in Land, his ideas, and his associates and provided him with the funds needed to develop the Polaroid Land camera by the sale of convertible preferred stock. The first public offering of Polaroid's securities in 1945 was no earthshaking success. Several years elapsed before investors were able to reap their rewards as Land plowed back all of his earnings in further research and development of the camera and film. As a result patent investors who bought the original stock at $28 a share saw the value of each share appreciate to $1,134 by the Spring of 1959.

The Barden Corp.: During the war the Norden Company began making its own badly needed superprecision ball bearings for its Norden bombsight. After the war the ball bearing business was spun off into a separate corporation, the Barden Corp. When the president of the corporation decided to retire and sell his shares, Shearson, Hammill & Co. and several others joined together to purchase his stock, which enjoyed no public market. Later the Norden family decided they needed to establish a public market for Barden, which would require continuous additional capital to grow. The initial distribution of the Norden family stock was accomplished, and several hundred new stockholders were obtained. The investment bankers continued to encourage public investment. Several large investment trusts became stockholders, and their ownership helped to establish the company's equity standing. It also provided a base from which to launch a recent offering of $1.5 million of new common stocks needed by the company to broaden its equity base and reduce bank loans.

New York Airways, Inc.: Equity financing necessary to launch this helicopter line servicing New York's three major airports was provided by Smith, Barney & Co. While the stockholder has not yet been well rewarded for his risk, the company seems to be approaching the pay-out stage and is preparing for the time when increased public acceptance and larger-capacity helicopters will up revenues and profits.

Ludlow Typograph Company: Investment banking specialists, called in to determine the market value of a substantial block of stock owned by an officer who had died, discovered this old-line Chicago company needed considerable additional capital to finance the introduction of a new product. The new capital was to be raised by a rights offering to existing stockholders. But these were limited in number and were not in a position to purchase all of the stock they were entitled to buy. The banking group headed by Shearson, Hammill & Co. successfully distributed nearly 60 per cent of the total offering to the public, including many long-time Ludlow customers.

Ryder System, Inc.: The securities of this holding company for a well-established but small Southeastern trucking and truck-leasing business first became available to the public in 1955 when it needed to expand and to acquire new capital. Blyth & Co. solved the problem by initially offering common stock at $10 per share. With the solid investment bases buttressed by excellent management performance, additional common stock financing was undertaken in 1956 (at $20 a share) and in 1957 (at $14.13). The company was able recently to raise $6.8 million (150,000 shares at $48 to the public) needed for additional expansion and at a price nearly three and a half times what its stock sold for only a year ago. The establishment of a sound public market for Ryder stock also has enabled the management to build a nationwide trucking company by acquiring regional trucking operators primarily in exchange for stock.

Statham Instruments, Inc.: A close associate of Louis Statham wished to diversify his large investment in this Los Angeles company, then closely held. Mr. Statham also wished to diversify his and to provide financing for the company's future expansion. Involved were several commonly owned companies which had to be consolidated before the financing could be accomplished. Blyth & Co. assisted in these negotiations and successfully marketed the 200,000 shares offered by the sellers. The sharp rise in the price of the company's stock since the offering provides an excellent currency for future acquisitions.

potent incentives for undertaking equity financing.

Manufacturers used much less equity financing as new plant and equipment needs declined during the recent recession. What financing they did was mostly in the form of debt—both because of its lower cost and management's reluctance to dilute equity in a period of lagging earnings. With sharp corporate earnings improvements forecast and rising interest rates increasing the cost of debt financing, financing through issuance of new stock seems bound to continue accelerating in the future.

In addition, the trend toward broader share ownership is gaining momentum. Widely held shares offer the smaller company many of the same far-reaching public relations benefits that they produce for big business.

Still another factor is supply and demand in stocks. Many Wall Street experts believe that a shortage of equities has helped to fuel the market rise. Large institutional investors are increasingly bidding for and tying up the "blue chips." As a result, many investors are turning toward smaller, growing companies which represent better investment value.

For all these reasons, more and more small and medium-size companies today seem destined to seek new equity capital. Equity financing through sale of stock to the public has been the traditional expansion route for many a smaller company. Caught in the dilemma of "expand or die," many such companies are struggling against the cash squeeze of inflation and high taxes.

Financing long-term growth

For the company wishing to grow by plowing back earnings into expanded operations and research and development, equity financing is almost a must. Fortunately, the equities of such smaller companies with real growth potential appeal to sophisticated investors.

They are glad to forego current returns in the expectation of bigger dividend and capital gains if the company grows as they hope it will. Funds for long-term expansion can thus be "paid for" from future earnings. And companies are able to expand with less risk and maintain greater financial freedom.

There are direct values to the owners of a smaller corporation who can provide for the marketability of their stock. In a growing company, market value often exceeds book value. Good management is rewarded by the enhanced market value of the personal equity. Original underwriting costs are often rapidly returned in capital gains to the owners and a very real increase in the value of their enterprise. They benefit also by keeping their own stock holdings more liquid. This opportunity to develop restricted stock option plans makes it easier to attract and retain top-caliber management.

Public offering of stock, especially when it is listed on a national exchange, strengthens the prestige and credit standing of the company. A strong balance sheet, where debt is not large in relation to equity, is evidence of the kind of financial soundness which is respected by suppliers, customers, and bankers. The necessity of meeting SEC requirements also may help management learn just how sound their company's financial structure really is.

Valuable side benefits

These are not the only rewards of equity financing. It may establish a valuation of securities for estate purposes. The initial access to capital markets makes future security financing easier and cheaper and also may make it possible to purchase other companies for stock and other securities instead of cash. The process of equity financing usually results in valuable new business relationships—possible mergers, new customers, future lines of credit, etc. And sponsorship by a well-known Wall Street firm may put a relatively obscure company (so far as investors are concerned) "on the map."

The commonest stumbling block to needed equity financing is perhaps management's fear of losing control. Executives of smaller companies don't like to give up any of their precious freedom of action. Actually, of course, control is much more likely to be jeopardized when a large minority interest is sold to one person or a close group than when stock is sold widely to the public. Owners seldom need to sell majority or controlling interest to obtain equity financing. When public shares are broadly spread among many small stockholders, management can still run the business without interference or unhealthy restraints.

But although there are advantages to equity financing, smaller companies should be aware of the disadvantages as well. For instance: Equity financing may force a company with a dominant franchise to reveal valuable information to competition on sales figures, profits, and so on. The initial cost is likely to be high—much fundamental work will be required for accountants, auditors, lawyers, engineers, certifications, and so on. And the need to find firms who know the special problems involved (lawyers who are familiar with SEC work, for instance) may upset existing business relationships.

Some alternative plans

For some companies, therefore, debt financing may be the sounder choice. Short-term and long-term needs, of course, should be financed in different ways.

continued on page 108

How to Pick an Investment House

Study the information that is available in published directories.

Get the advice of your commercial banker and his big-city correspondent banks.

Consult your company lawyers and auditors, especially if their firms have had specific experience with underwritings.

Question management consultants who are well informed in this field.

Talk to other business managements who have had experience marketing their securities to the public and, if possible, experience with the investment firm you are considering.

Talk to several different investment banking firms (but don't shop your proposition around).

Finally, take your time. This decision can make a major contribution to your company's future—haste will not pay.

ITT's far-ranging president speaks out on . . .

The Growing Challenge of FOREIGN COMPETITION

As head of a complex industrial empire that fans out over 29 countries in the Americas, Western Europe, and the Far East, General Edmond H. Leavey, president of International Telephone and Telegraph Corp., is in daily touch with developments in overseas competition. At company headquarters in downtown New York's financial district—during a break in his unending tour of duty visiting ITT's 37 manufacturing and laboratory units and 80 principal plants overseas—the General recently discussed with a DR&MI editor some of the key issues of foreign competition of vital concern to U.S. executives.

General Leavey, the President recently said that U.S. manufacturers may be pricing themselves out of the world market. To what extent do you agree with this view?

I agree with the President's statement as far as it goes. But manufacturing costs are not the only factor in this situation. It's also due in part to foreign monetary considerations. Some countries just do not have the dollar currency to pay for our exports.

Again, things made for the American market are not always suitable, design-wise, for other countries. One example on everyone's mind is automobiles. I have spent enough time abroad to know that many foreign highway systems, the old cities with narrow streets, plus the high price of gasoline, simply make the big American car unsuitable for unlimited export. That is probably true of other things also.

To what extent do you believe U.S. business has an obligation to maintain full domestic employment, as against the potential attractiveness of manufacturing more cheaply overseas?

No company can maintain an excessive payroll just to promote full employment. What constitutes proper employment for a given company must be governed by business considerations. In my view, a successful attack on the employment problem requires the cooperation of labor. If labor costs go up, they bring higher material costs, which in turn mean higher total production costs. In this situation, a company cannot maintain full employment unless it can sell more of what it makes at prices high enough to pay the higher production costs and still return some profit to the investors. If labor costs keep rising, it becomes increasingly harder to do that.

If U.S. business neglects its responsibilities in such areas as employment, do you think there is any chance that the Federal Government will establish controls over exports and imports—possibly in the manner followed by the British government after World War II?

My personal feeling has always been that real economic stability can only be achieved by free, rather than controlled, economies.

ITT spreads manufacturing among our various companies in accord with their capacity and costs. One of our French companies, for example, has been a distributor of goods manufactured by one of our British companies. They could have sold in France every single machine they could import, but the import of these machines was under strict governmental control.

Now, the recent relaxation of quota controls in Europe is going to help the British company which produces the machines; it is going to help our French company which sells them; and I think it will help the buyers of the machines because they have been handicapped hitherto in their own company or organizational development by inability to get the machines they needed.

What do you think are the most important capital investment opportunities for U.S. companies abroad? Which countries are most favorable for U.S. investment?

There are many good investment opportunities abroad today, although things change so fast that you can't single out any particular area which will be better than any other in the long run. A lot of foreign raw material sources will provide very important opportunities for future American investment, with the proper local safeguards. Where machinery and low cost labor are also available, you may have a very attractive opportunity to process the materials there as well as produce them.

As a matter of company policy, ITT has continued to develop its foreign manufacturing and research operations, because we believe in these opportunities. However, this has not been done at the expense of our development in the United States.

To what extent do you believe that trade between the United States and other countries should be free—and to what extent do you believe that it should be protected by tariffs and quotas?

I think that the fewer controls we have, the better off we are. Let's say that a U.S. company establishes an overseas factory primarily to produce at a lower cost something that could be brought back to this country for assembly. That company would lose whatever profit or sales advantage there might be in its lower production costs if a higher tariff were placed on its imports, and the U.S. economy would not be helped at all.

But if the same company sought other export markets where its lower manufacturing costs would give it competitive advantages, then its sales and profit picture might be quite different, and the U.S. economy would definitely be helped.

If you were president of a company considering setting up an overseas manufacturing operation for the first time, how would you approach the problem?

Very carefully. If the manufactured product were to be sold abroad, I definitely would advocate manufacturing abroad. But if it were destined for import to the United States, the problem would have to be examined with a magnifying glass. The primary consideration would be whether the proposed volume of import might arouse a demand for so-called "protective" tariffs.

You would also have to study such things as local laws, local social benefits, taxes, availability of labor, and many other possible pitfalls.

Do you think that the differential between cost of production here and overseas will be narrowed in the future—and if so, how?

The answer really depends on which countries maintain low wage levels and which allow them to increase without control. If the same relative differences in wage levels are maintained, the gap will close much more slowly, and I would say that the present attractive situation overseas would continue for some time.

There are several other factors to consider, however. The fact that America suffered no actual war damage gave us an advantage in manufacturing which is now being eliminated. Production facilities in a number of war-damaged countries have, in effect, undergone a forced rejuvenation which has carried with it an in-

creased ability to produce well and cheaply.

The development of technology overseas has also helped foreign manufacturers to produce more cheaply. Raw materials are another important factor. At the moment, we still produce more raw materials for our own use than do most other countries. But our superior position can readily change and place us at a disadvantage in that respect.

What benefits do you foresee for American manufacturers as a result of the creation of the European Common Market?

I think a U.S. company which suddenly decides to establish itself abroad might be faced with some initial handicaps, such as unfamiliarity with local laws and local social legislation and practices. But for my money, the Common Market gives established companies such as ITT a chance to make considerably better and more effective use of their manufacturing facilities. We have well-established companies in each of the Common Market countries except Luxembourg.

We expect that the lowering of the tariff barriers and the agreements toward reciprocal trade that go with the Common Market will enable us to operate at lower costs, to handle our research, manufacturing, and assembly operations on a broader basis, and to take better advantage of the broader sales market that should develop.

When a U.S. manufacturer conducts its research overseas, does it gain any competitive advantages? Are there any drawbacks?

It depends on whether the company already has research facilities overseas. Any company trying to establish new research facilities abroad just now would have a tough time because of the shortage of scientists and technicians overseas as well as here.

ITT, of course, has been operating in the research field abroad for some time. We have two types of research in our system—for defense purposes and for industrial purposes. Most of our defense research is done for the U.S. Government and, therefore, has to be done in this country. On the other hand, our overseas companies do research for their own governments and also nondefense research for our own purposes. We operate in 29 countries and conduct research in twelve of them. We have, on the whole, more engineers and scientists working abroad in our nondefense efforts than we have in similar efforts here.

We have found that the development and research work done in our various laboratories abroad is excellent, just as good as here. No one group of people in the whole has a corner on brains. We feel we are in a specially good position because we are able to make use of the best brains to be found in many areas outside the United States to complement our very fine technical groups in this country.

Does this research abroad give ITT any competitive advantages?

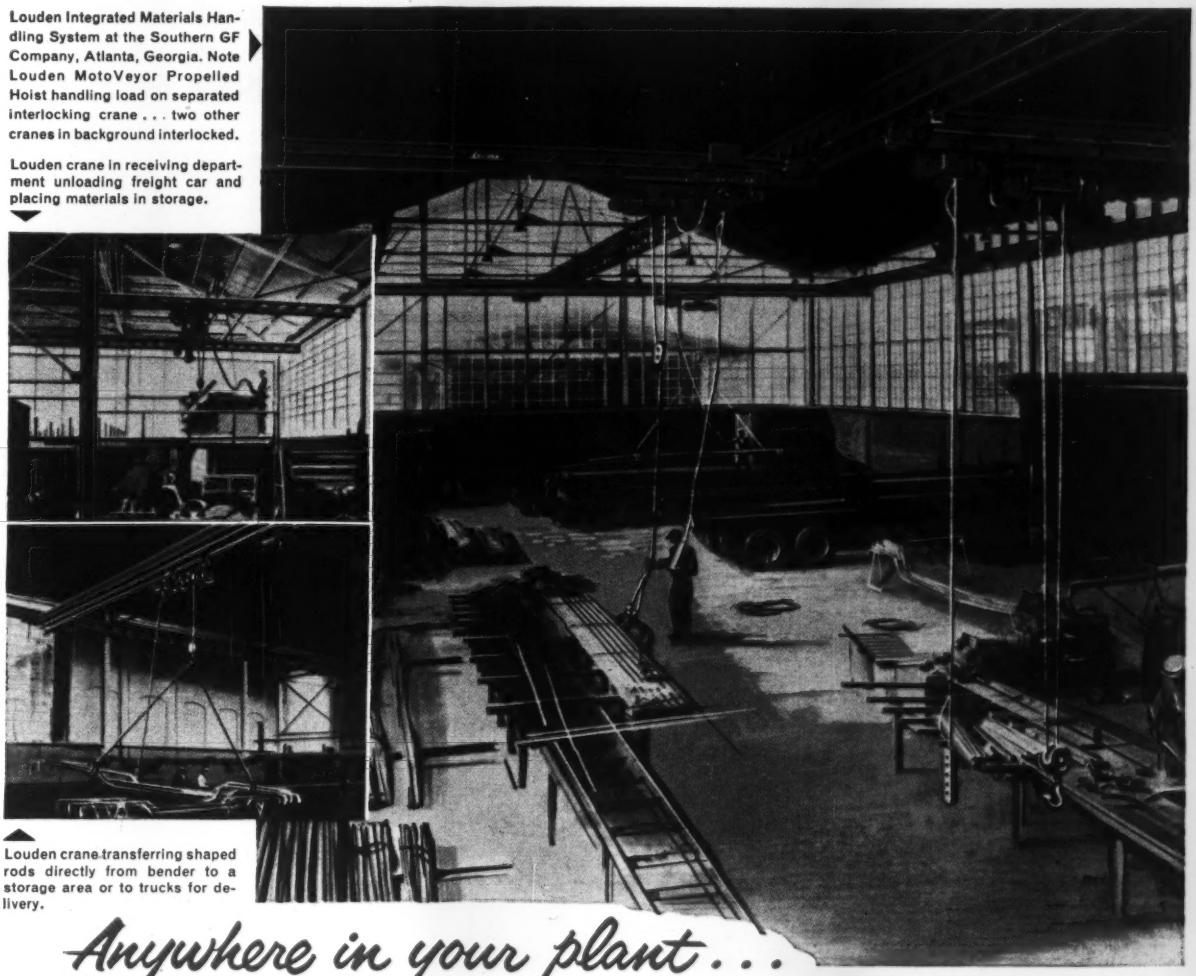
On a worldwide basis, yes. On a country-by-country basis, the advantages are limited by the conditions existing in each such country. But we have an unusually extensive system of transfer of technical information between countries. The research we do in each of our various laboratory and manufacturing operations is funneled to our New York headquarters and made available to our entire manufacturing organization, both here and abroad.

Not long ago, for example, we licensed Du Pont to make and produce silicon by a method developed and perfected in the laboratories of one of our British companies, which opens the way to commercial production of the purest silicon produced to date. Likewise, our French and Ger-

continued on page 86

Louden Integrated Materials Handling System at the Southern GF Company, Atlanta, Georgia. Note Louden MotoVeyor Propelled Hoist handling load on separated interlocking crane . . . two other cranes in background interlocked.

Louden crane in receiving department unloading freight car and placing materials in storage.



Louden crane transferring shaped rods directly from bender to a storage area or to trucks for delivery.

Anywhere in your plant . . .

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Typical of how Louden Material Handling Systems can integrate the handling operations in an entire plant is the installation at the Southern GF Company of Atlanta, Georgia. This steel bar fabricator uses two sets of Louden Interlocking Cranes, each on parallel sets of Louden Crane Runways that run the length of the fabricating area. A single Louden Crane is used width-wise at one end of the plant for unloading and placing raw materials in storage. The interlocking cranes pick up material from storage and deliver it to the shears, then to the benders and from there either to storage or to trucks for immediate use.

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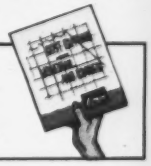

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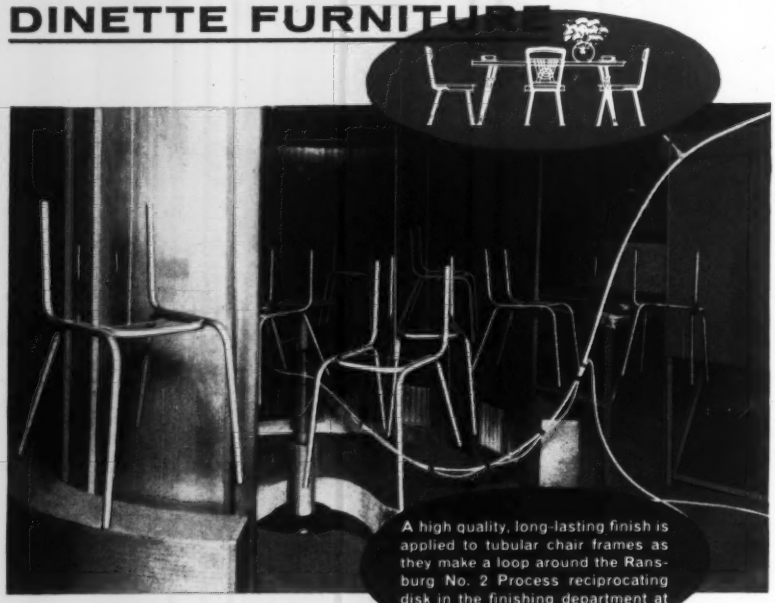

A high quality, long-lasting finish is applied to tubular chair frames as they make a loop around the Ransburg No. 2 Process reciprocating disk in the finishing department at Kay-Mar Industries.

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CORPORATE SIZE
continued from page 53

Smaller companies also rely on the industry leader to "pioneer new techniques and keep the rest of us scrambling." They welcome such competition. "If we didn't have competition from above," says one president, "we'd get soft in our methods." And because of its conspicuous industry position, the big company's mistakes demonstrate publicly to the smaller company what to avoid.

Togetherness for profit

It is a truism that big and small business need one another. The nature of this interdependence can be explored in many ways. It is so complicated that any brief analysis of it is bound to tell only a partial story. Yet some interesting figures emerge from the DR&MI survey.

The typical smaller industrial company, these findings show, buys from 60 suppliers, about a fourth of them big companies, and sells to 50 industrial companies, slightly more than a third of them big.

These averages do not necessarily reflect the *dollar volume of business* the smaller companies do with big customers and suppliers. For example, one of the smaller companies reports buying 90 per cent of its dollar volume of supplies from big companies, but adds that big companies represent only 10 per cent of its suppliers. Another company reports that about 10 per cent of all its industrial customers are big companies, but that this group takes 60 per cent of the dollar product volume.

As a rule, of course, any business buys where it has or can get the best deal and sells where it can get the best price. Yet some larger industrial companies have made an effort, as a matter of policy, to divert a portion of their purchases, service expenditures, or processing contracts to smaller businesses. Often this policy may be set with one eye on antitrust-minded Washington and the other on public opinion. But in other cases, it is based on convenience and cost advantages. Of the large companies surveyed, 43 per cent make it a policy to do some business with small companies. One big company in this group volunteers that over the past eight fiscal years, almost 50 per cent of its purchase commitments have been placed with smaller businesses. In the

last fiscal year, 83.5 per cent of this same company's suppliers were smaller business concerns.

As evidence of the smaller company's specific competitive strengths, 39 per cent of the larger industrials in the DR&MI survey report eliminating or curtailing production of some product during the past five years because their smaller competitors were able to make it better, more cheaply, or more efficiently.

Obviously, the big company's financial resources do give it a powerful competitive advantage. More money spells better machinery and equipment, more research, bigger and better sales forces, higher-caliber management personnel.

Large-company presidents mention other advantages as well. Diversified lines, for example, provide three benefits: they permit less profitable products to be averaged in with more profitable ones; they spread the risk, especially in lean years when some product markets may slip while others thrive; they provide a full-line selling opportunity, so that the customer can fill all his needs from one basket. National advertising, prestige, and brand names are self-evident advantages, as are volume production and national distribution systems—all of which cost too much for the typical smaller company.

Advantages of being smaller

But smaller companies, say both groups of presidents, also have some clear-cut advantages. Lower overhead ranks high among these. Profits can be made on shorter and more specialized product runs, with a relatively lower initial investment. Labor may be less costly and freer from union pressures (although some of the smaller-company presidents dispute this vigorously). Fewer fringe benefits may be a factor. And in smaller companies, management has closer and more direct control of all phases of the business. Many smaller-company presidents, in fact, attribute their *esprit de corps* to a close-knit, intimate management group. Personal contact with the customer and personal service are typical smaller-company assets. So are flexibility and faster decision making.

From the bigger company's point of view, smaller business has one unique convenience: freedom from political or other attacks on size. And smaller business regards prestige as

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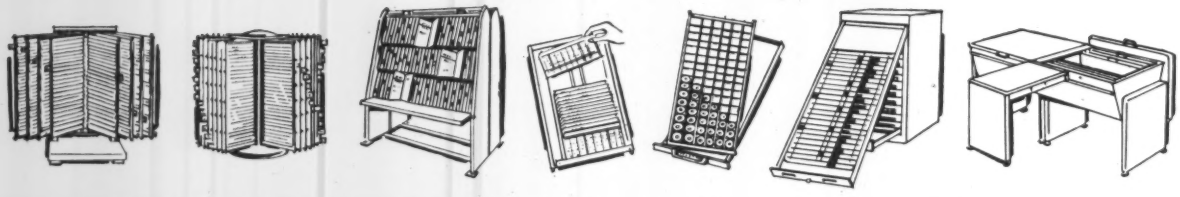

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an advantage unique to big business. The well-known name and well-known brand reap many benefits. And big business alone can bid on major defense contracts.

But the consensus views show remarkably little resentment on either side. The grass doesn't always look greener in the other fellow's yard.

Growth by merger

Everyone, of course, would like a bigger yard—and a bigger plant with added capacity for growth. One fast way to get it is by merger—and, in fact, the large industrials covered in the DR&MI survey say they merged with or acquired an average of 2.6 other companies since 1953. The relatively smaller industrials (some of which themselves acquired other companies) report receiving an average of 4.5 purchase offers during the same period. Among the large companies, about a fifth completed no acquisitions or mergers, and a fifth bought or merged with five or more other companies. Among the smaller companies, about a third received five or more purchase offers, and about the same number received no offers.

But the fact remains that 71 per cent of the smaller industrials were approached with merger or purchase offers in the past five years—and turned them down. Why? Mainly for six reasons:

- The present management liked running the business and refused to give up operating control.
- The company believed in its own future.
- The price offered was too low.
- The deal seemed suspicious.
- There were no tax benefits at the time.
- To sell out seemed like disloyalty to family members in the business or to employees of long standing.

Some of the human drama in these situations is recorded in the survey replies. One president explains his refusal like this: "My business is my life, and I'm still alive and active." Says another, "If we are worth *x* dollars to others, we must be worth at least that much to ourselves—and we are having fun." Selling out, reports another president, would have "meant sacrificing some of the upper echelon or becoming top-heavy with executives." Many presidents mention the satisfaction of close personal control and of independence.

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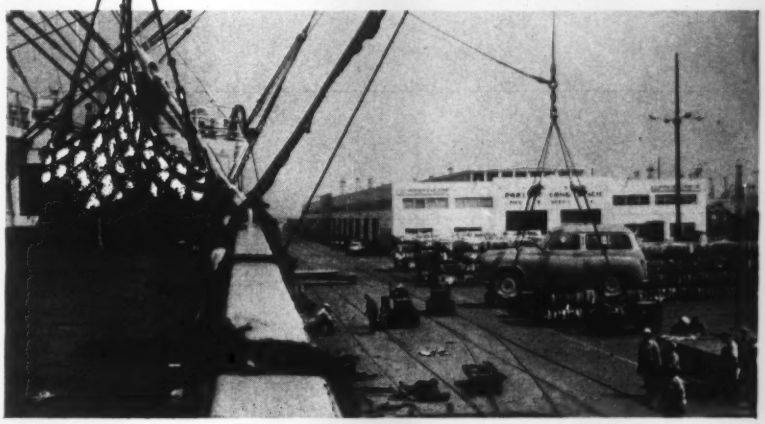

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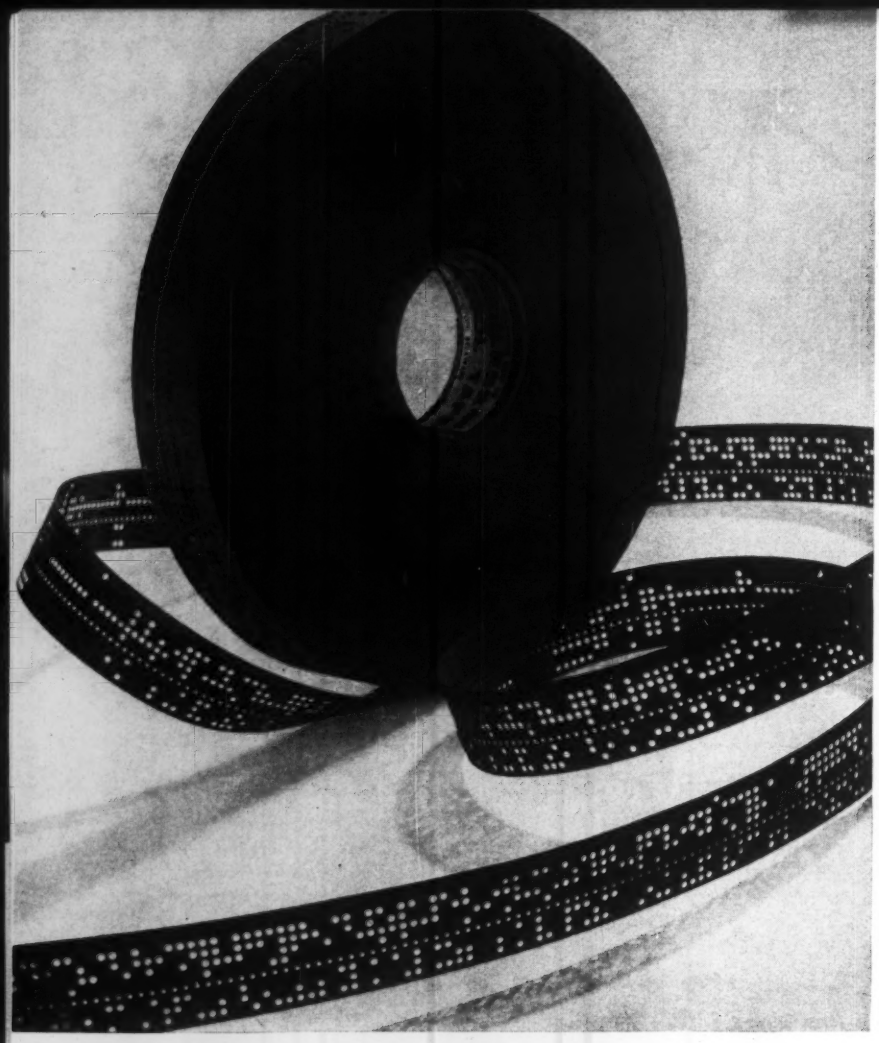

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But whether growth is by merger or internal expansion, few presidents, big or small, believe that legal limits should be set on company size. In fact, 96 per cent of the large industrial presidents are emphatic that no statutory limits should be set, and 88 per cent of the smaller company presidents share this view.

If a specific maximum share of market were established for individual companies, a minority among the large company presidents think it should be around 50 per cent, while the smaller industrial presidents set the figure at about 25 per cent. But nearly three times as many of the smaller company presidents—24 per cent—flatly reject the idea of any maximum market limit. They would let the ultimate share of the market be determined by product quality, healthy competition, and consumer preference and demand.

One of the smaller industrial company presidents speaks for both groups in this representative view:

> To legislate a specific size beyond which a company cannot grow seems to me to impinge on our economic way of life. Essentially, the size of a company is regulated by its customers. Its total share of a specific market is attained by the votes customers place for it by buying its merchandise. To set a limit of 35 or 50 per cent would seem to me to be very difficult. Supposing a limit of 35 per cent is placed on a company's percentage of industry sales. What do you do with customers who constitute the 36th per cent if these customers wish to buy this company's products? I must agree that monopoly is an undesirable thing, but I am unable to state what share of the market constitutes a monopoly, or how the size of a market can be restricted without greatly damaging our free enterprise system.

In defense of bigness

While the overwhelming majority of companies, large and small, obviously have no quarrel with bigness, the same cannot be said of many legislators, economists, and public officials—not to mention a large segment of the public. Currently, in fact, attacks on bigness seem to be gathering intensity and momentum, and many big companies are frankly worried. Asked what big business can do to counteract such criticism most effectively, a large number of company presidents reply that it needs, first of all, to tell its own story better. For one thing, they say, people need to be reminded that the public itself, in growing numbers, owns big business. The typical large company in

the DR&MI survey is, in fact, owned by 16,250 stockholders, compared to 25 for the typical smaller industrial company. The 98 larger companies providing stockholder data report a total of 1,592,402 shareowners. In contrast, 107 independent smaller companies reporting stockholder data have a total of 2,718 shareowners.

More people need to know, the presidents say, that the consumer gets a better bargain on some consumer products from the big producer. Big business, they add, plays a necessary role in national defense, weapons research, and space technology.

Educating the public

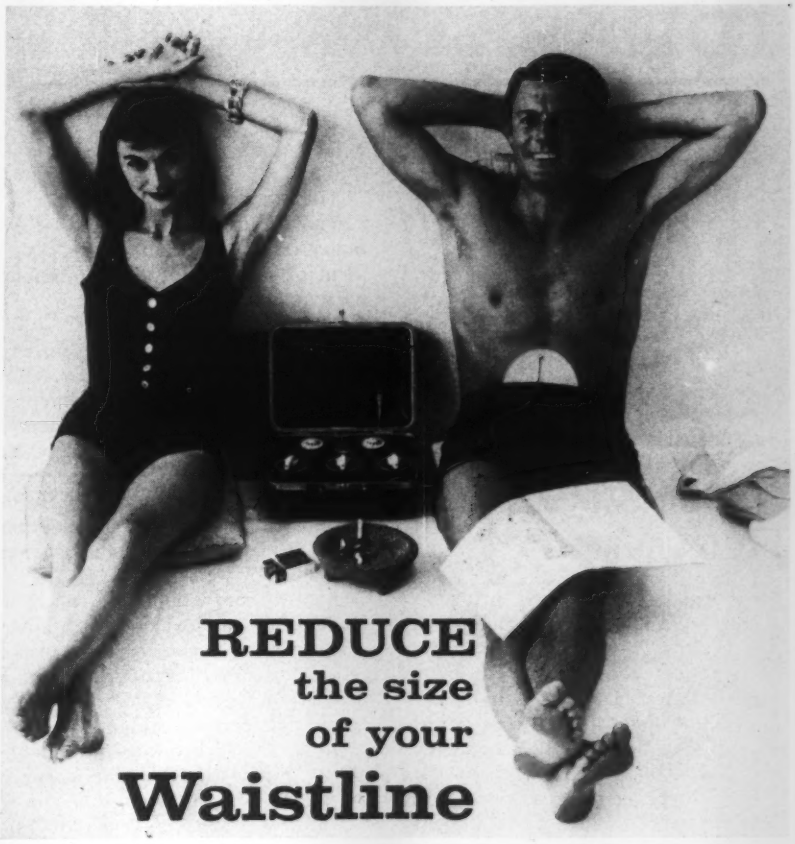
The survey reveals a groundswell of presidential opinion in favor of more basic economic education for all, beginning in grade school and spreading out everywhere—in business talks, PTA meetings, and even to the fellow in the next seat on the plane or train. The function of profits needs to be made as clear to the average consumer as it is to the business manager.

A few big companies concede, however, that some large companies need to act more responsibly or refrain from preaching values they fail to practice. Some big businesses, they declare, need to police their own behavior in such areas as unfair pricing and reciprocity.

Smaller business, though intensely concerned with big business's unfair pricing policies and other competitive pressures, fundamentally believes the real shackles on its own growth are imposed by the Government.

Small business wants freedom from interference—and freedom from patronizing Federal help. It wants the right to grow, and believes that the most helpful monetary aid it could get would be reduced taxes. Also, the smaller company president often resents the "multitude of reports called for by Government, adding to costs, but of no value to anyone."

In fact, the smaller industrial company president sounds, in his survey replies, much like the big company president. He wants the Government to stay out of his business and stop picking his pocket. He'd like to see his own company grow a good deal bigger. To him, the real threat to his own growth is not the competition of the giants, but the concentrated and costly power of big labor and big Government. —KENNETH HENRY



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IDEAS at Work

Say It with Silver

How much impact does one company's payroll have on a community? The Federal Pacific Electric Company of Scranton, Pa., found a dramatic way to demonstrate its role in the economic life of the town by paying off its day shift of some 400 workers in bright new silver dollars.

The novel payroll was part of the celebration of Lackawanna Industry Week sponsored by the Scranton Chamber of Commerce. Federal Pacific was chosen to symbolize the accomplishments of the Chamber's LIFE (Lackawanna Industry Fund Endeavor) program, which was launched in 1946 to finance the construction of new manufacturing plants to replace a waning coal industry.

Payroll preparations required almost a month. An order had to be placed with the U.S. Mint in Philadelphia for the nearly $40,000 in silver coins needed. The payroll, weighing close to a ton, was transported by a lift truck to the paymaster's office, where the workers lined up to receive their bags of silver (see photo above).

Each time a worker paid his grocery bill or bought a pair of shoes with some of his "cartwheels," the community was reminded of the company's contribution to its prosperity.

Blue-Collar Consultants

Administering a burgeoning profit sharing fund isn't just a management bookkeeping function at Motorola Communications and Electronics, Inc., where employees share the administrative duties as well as the profits.

The most recent innovation in the company's program for employee participation in the fund is the assignment of 136 employees as rank-and-file consultants on profit sharing to their fellow workers.

These long-time employees were selected and trained to answer fellow workers' questions regarding the profit sharing fund and to help them in computing their account book value.

The fund "experts" are workers in the various departments of all Motorola plants. They are easily identified by a "prof sharin' assistant" sign on their desk or work bench.

An Advisory Committee, which includes other employee representatives, works with management and a firm of professional investment counselors in deciding how fund capital shall be invested. The fund representatives then report to their coworkers through employee publications on the status of their capital investments.

Motorola's eleven-year-old fund has been outstandingly successful. In 1958, it hit an all-time high of $35.4 million, making it the second largest deferred-type profit sharing fund in the nation.

Bonus Fringes for Clerks

Fringe benefits on the trading stamp plan are being offered by Walco Products, Inc., to retail salesmen as a reward for encouraging customers to buy its phonograph needles.

"Spiffs," of course, have been a common sales promotion device for years. The new wrinkle in Walco's plan is that it offers the salesman working for a small dealer something he otherwise might not be able to obtain: low-cost group hospitalization and life insurance.

Five months ago, the company set up the Walco Super Bonus Club which works like a trading stamp operation. Each time a clerk sells a Walco needle, he removes the stamps attached to the back of the needle's envelope. The number of stamps on the envelope varies with the price of the particular type of needle. When the book is full, it represents the sale of $375 worth of Walco products and is worth $15. The clerk mails the book to Walco's East Orange, N.J., plant, and a check for that amount is mailed to his home.

Any dealer or clerk who fills one book a year also qualifies for membership in the Bonus Club. All members are eligible to participate in the fringe benefits, which include a $2,500 or $5,000 life insurance policy. The hospitalization policy pays up to $15 a day for 70 days, plus up to $225 for miscellaneous hospital expenses and up to $300 for surgery.

The insurance costs $15 a year for the $5,000 policy, and the hospitalization plan costs $10.70 a month for family coverage or $3.05 for an individual. A club member may pay the premiums either in cash or stamps.

As an added inducement to larger retailers, the club offers a fifteen-day tour of Europe at $700 a person. It also gives the salesman discounts on the purchase of Walco products.

A monthly four-page house organ,

"Walco Soundings," which is mailed to club members, carries information on needles and selling techniques and free classified ads for dealers seeking sales help or for clerks wishing to change jobs.

Response to the sales promotion plan has been living up to Walco's expectations. Several hundred sales people already have joined the Bonus Club. New dealers are being signed up, and Walco is becoming more strongly entrenched with its original dealers. Cost of the sales-stimulating device is running just over 3 per cent of sales.

Free Fun Builds Morale

Five-day all-expense trips to beach resorts and big cities are standard employee benefits at the A. H. Robins Company, Inc. of Richmond, Va., where good times have proved to be good business.

E. Claiborne Robins, president of the pharmaceutical company, began his unusual morale-building program ten years ago by taking his entire workforce of more than 100 employees to New York for dinner, the theater, and a shopping expedition, with a $100 check for each worker.

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Almost any office can afford this punched tape system for typing and filing data. Underwood has simplified data processing by standardizing components—by job-fitting to avoid costly unused capacity—by developing an electronic brain that enables simple components to do many jobs at once.

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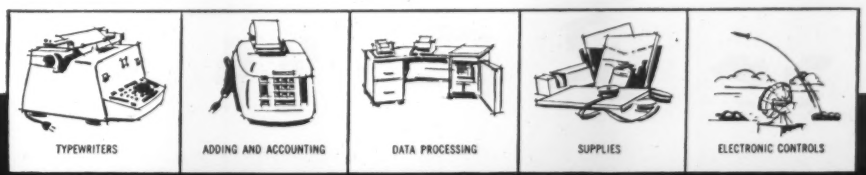
There are more, of course, and still more on the way. For simpler, less costly ways to master paperwork, call Underwood. The advice you'll receive is based on 64 years of experience. Products are backed by over 2000 expert servicemen.

*An Underwood Trademark



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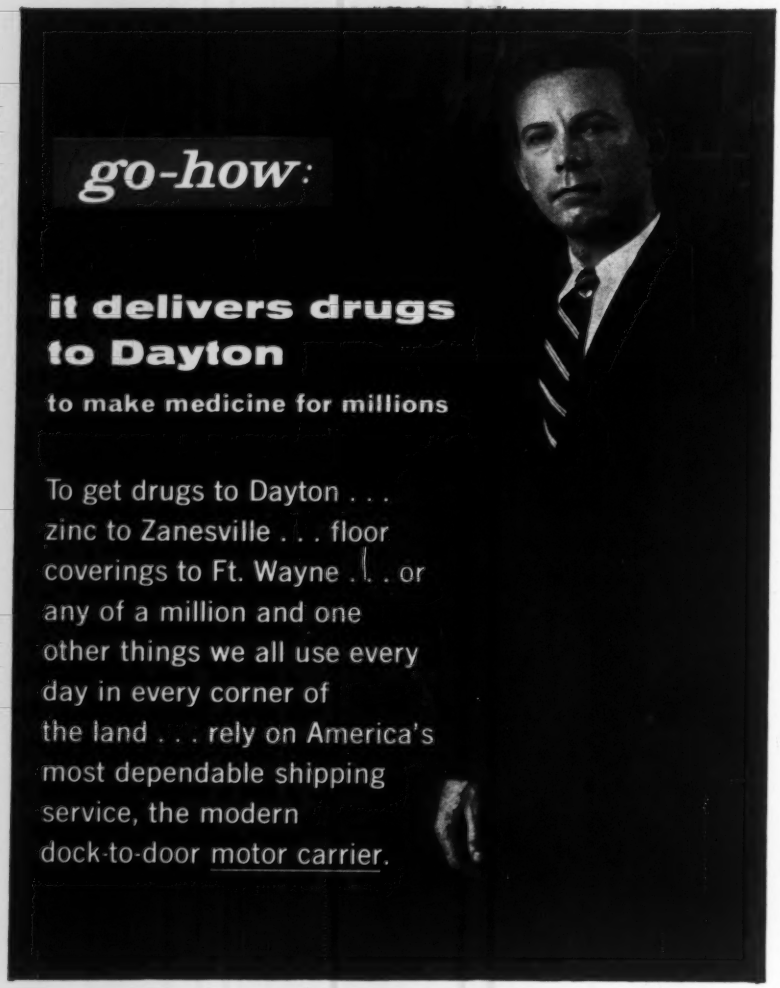
Business machines and systems to master your paperwork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Since then, Robins employees in groups of 175 or more have taken company-paid excursions to Washington, D.C., Miami, and Havana. They also enjoy such "extras" as birthday checks, beach parties, and coffee on the company twice a day.

Robins is convinced that the company's rising production and profit curves are the result of his fun-and-work philosophy. The plant has never had any labor trouble, and Robins "can't recall" when an employee quit to take another job. Employee efficiency has risen markedly, and there is always a long waiting list of job applicants.

The employees came up with an unique idea of their own to show their appreciation to their boss. They chipped in to send Robins and his wife (see photo above) on prepaid vacations to Acapulco and, this year, to Las Vegas.

Every Man a Salesman

All employees of the Goodyear Tire and Rubber Company, including production workers, sales and office personnel, retirees, and stockholders, joined in helping the field sales force fight out of last Fall's business decline.

The entire Goodyear organization went to work persuading friends, relatives, neighbors, and business acquaintances to buy and sell Goodyear products. The results of the "Buy Goodyear-Sell Goodyear" campaign were so profitable that the company has decided to make the plan a permanent feature of its sales program.

More than 7,000 employees quali-

A SINGLE ROW of automatic food and beverage dispensing machines has replaced the employee cafeteria at Ford Motor Company's Pennsauken, N.J., parts depot.

fied for a special award of a Goodyear 60th anniversary tie clasp or pin for having purchased or influenced a plus sale of Goodyear products worth $100 or more. Tire salesmen promoted the sale of non-tire products, while salesmen of other items influenced plus sales of hundreds of sets of tires.

Thousands of reports of plus sales made as a result of the campaign were received from Goodyear plants and sales districts here and abroad.

Premiums on Suggestions

New life was pumped into a sluggish suggestion system at General Electric's Pittsfield, Mass., plant by offering special non-cash prizes for money-saving ideas.

The unusual suggestion contest was a feature of GE's anti-recession "Operation Upturn" campaign. During the contest, Pittsfield employees suggesting cost-cutting ideas were given an additional 50 per cent bonus in the form of merchandise certificates which could be redeemed at local stores. The cooperating merchants identified themselves by placing a special sticker in their windows. The merchandise they gave in exchange for the certificates was paid for by GE.

The success of the contest was many-sided. The store owners were so pleased by the way the contest stimulated sales that they voted to allow $6 worth of merchandise for each $5 worth of certificates. Winning employees enjoyed their bonus gifts, and the company was rewarded with a wealth of profitable suggestions and praise for contributing to the welfare of the community.

Ideas by the Cupful

Management has found a novel way to get its messages across to workers at General Motors plants. Reminders about safety, suggestion programs, productivity, and other company activities are imprinted on the paper cups in soft-drink and coffee machines.

Ideas for the messages are given by GM to the cup manufacturer, who prints the cups and stacks them in the tubes in such a way that four separate ideas are dispensed before the first one is repeated.

Proof of the Puddling

Two hundred steel workers journeyed from Allentown, Pa., to New York's International Airport last month to have a look at the $8 million air terminal they helped to construct.

The men represented the 600 Lehigh Structural Steel Company employees who produced the more than 4,000 tons of structural steel for the huge, umbrella-like roof of the new Pan American World Airways public terminal.

The steel company sponsored the trip and brought its key craftsmen to New York in four chartered buses. The trip fulfilled a promise made to the employees before his death last December by Lehigh's former president, Thomas R. Mullen. —C.K.

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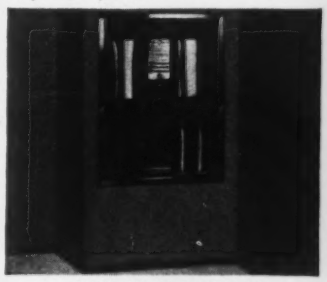
SAVE with a GROVER Transitube System

With Grover Transitubes you can completely automate your present production and material control operations, and do away with old fashioned messenger service — hall traffic — elevator traffic — the tying up of already busy phones.



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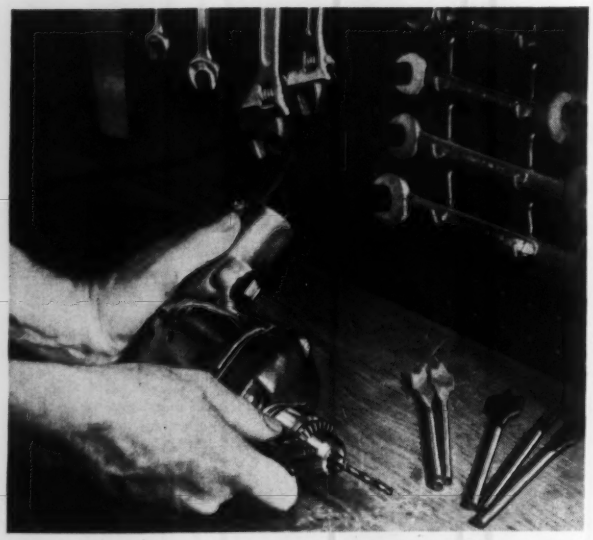

Nickel-alloy steel for strength—Drill chucks and gears of Nickel-alloy steel are tough and strong—made for hard use. And those wrenches have a durable Nickel-chrome plated finish that keeps them gleaming and free from rusting.

Nickel Stainless Steel for easy cleaning—Nothing is easier to care for! That new stainless steel tile on the wall—as well as utensils, disposal cans, wall ovens and sinks—keeps thoroughly clean and bright with just soap and water.

Nickel-chrome plating for beauty—Lustrous fixtures of Nickel-chrome plating add welcome sparkle to a bathroom. They don't tarnish, never need polishing. No worry about rust or corrosion, either—vital in a humid room.

Nickel-alloy heating elements last longer—And so, an electric paint remover like this one can give you better service. There's a Nickel-alloy element in that soldering iron, too—still others in quality percolators and ranges.

Why manufacturers use Nickel to help their products sell better

The makers of these hardware items all want to give their products the best possible chance to sell. That's why they turn to Nickel.

Nickel can add saleability in so many ways. For example, it increases the corrosion resistance of stainless steel . . . makes it easier to fabricate. It adds toughness and strength to steels that go into hard-working tools. As Nickel-chrome plating, it puts a lasting, gleaming finish on metal that catches the eye.

There are other things Nickel can do, of course. We'd welcome the chance to tell you about them. And now, with increased production by Inco assuring abundant supplies of Nickel for years to come, wouldn't this be a good time to investigate the possibilities? Write today for further information to answer your particular questions.

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Inco Nickel

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Inside Industry

Man-made "mountain air" may boost productivity.
Why scientists and technical men won't organize.
Woven graphite: familiar material in a new form.

IN THE intensified search for ways to increase worker productivity, there is one bet that industry may have overlooked — negative-ion saturated atmospheres. And negative ions released in stores also may stimulate customers to buy, according to at least one knowledgeable researcher.

A negative ion is an atom that has picked up an extra electron on its travels. It can be produced in the air by radioactivity, lightning, ozone, or ultraviolet light. No one has been able to figure just what negative ions do inside our lungs, but they produce an effect comparable to breathing in fresh mountain or sea air.

Many medical researchers have demonstrated repeatedly over the years that negative ions in the air we breathe can stimulate a feeling of well-being or pleasant, mild exhilaration. However, there has been no concerted effort in this country to find out the full extent of their beneficial effects and put them to work.

Although comparatively few industrial researchers are aware of the beneficial effects of negative ions, at least four companies are manufacturing products that generate negative ions. Since 1957, Philco Corp., Philadelphia, has turned out 10,000 room air conditioners with a negative-ion producing accessory. Wesix Company, San Francisco, makes a desk top generator (see photo) with a tiny, harmless radioactive source as the generator. Two other small companies also make inexpensive home ion generators.

Research into the therapeutic values of negative ions has been proceeding for years in this country. But, as yet, enthusiastic acceptance by the medical profession is by no means general. A few doctors and hospitals make routine use of them. (In Russia, at least 100 hospitals use them to treat some ills.)

So far Philco is the only air-conditioning manufacturer offering negative ion generators. However, Carrier Corp., Syracuse, N.Y., is also studying the market for them, and General Electric is keeping a sharp eye on the situation. Philco is presently testing ion generators for central home air-conditioning systems but has no plans for producing big units suitable for stores or factories.

Since ultraviolet radiation, when properly channeled, produces negative ions, there is the possibility of combining the germ-killing properties of UV with the feeling of well-being created by negative ions in the same piece of equipment. Dr. Rudolf Nagy of Westinghouse, one of the top UV experts, is now studying this possibility.

While there still isn't enough activity in industry to predict any commercial boom based on ion technology, the growing research in the field is sure to result in some interesting new products.

Thumbs Down on Unions

The great majority of scientists and engineers are opposed to joining unions. Demonstrated in many previous studies, this fact has been reaffirmed by a new survey conducted by the University of Michigan. Out of 250 scientists and engineers interviewed, 50 per cent are strongly opposed to collective bargaining, 29 per cent are mildly opposed, and 20 per cent favor collective bargaining. Significantly, the minority favoring collective bargaining work for companies where morale among professional workers is lower and dissatisfaction with management prevails.

Ultrasonics Aids Welding

Welding by ultrasonic vibrations alone has been going on in a few companies for the past few years, but now two researchers have shown that adding ultrasonic vibrations to conventional welding makes the resulting welds stronger and less brittle. John N. Antonevich and Robert E. Monroe of Battelle Memorial Institute, Columbus, acknowledge that there are still some problems associated with combining conventional and ultrasonic welding, but the possible gains are most intriguing.

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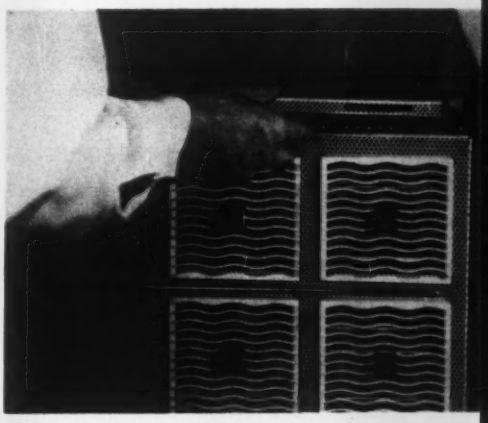

ION ACCESSORY: *More than 10,000 Philco home air conditioners have been sold with "Ionotron" negative ion producing attachments, like that a technician is installing here. The device won't work on ordinary AC current; it requires a special power supply.*

INCREASES OUTPUT: *The goose-neck device at the right is a Wesix negative ion generator. A tiny, harmless radioactive source generates the ions, which are said by many researchers to give a sense of well-being, thereby increasing worker output.*

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SPACE-SAVER: *This specially designed Louden fork-lift, suspended like a gantry crane, cut storage space requirements and enabled Allen Manufacturing Company, Bloomfield, Conn., to assign five workers elsewhere to other materials handling jobs.*

In another phase of ultrasonics, Combustion Engineering, Inc., Windsor, Conn., has received an Atomic Energy Commission contract to develop an apparatus that roll-bonds nuclear fuel elements by means of ultrasonics.

Beryllium Moves Ahead

Beryllium, the prodigal among light metals, took another giant step towards commercial acceptance as a pure metal with the announcement that closed-die forging of the tough metal is now practical. Working under a U.S. Air Force contract, the Wayman-Gordon Company, North Crafton, Mass., developed the technique for fabricating useful parts out of extremely pure beryllium powder costing $80 a pound.

In stock form, beryllium is difficult to machine because it is both brittle and toxic. However, a new Air Force report explains how it can be fabricated safely. Harmful to humans in particle form, light-weight beryllium can be machined, rolled, forged, welded, and so on, if the safety precautions outlined in the report are followed. The report is available from the Armed Services Technical Information Agency, Arlington, Va.

Advance in Painting

Paint is becoming one of the most versatile materials in the industrial larder. Now that germicidal and fire-retardant paints are well established,

a paint chemist has succeeded in blending a *sound-absorbing* paint. Granules of sound-dampening material added to the paint vehicle do the trick.

Although less effective than acoustic tiling, the new paint, made by Acoustic Chemical Corp., New York, is much less expensive. It can also be applied to irregular surfaces. Since it is applied very thickly, a gallon of the sound-absorbing paint covers only half as much surface as does ordinary paint.

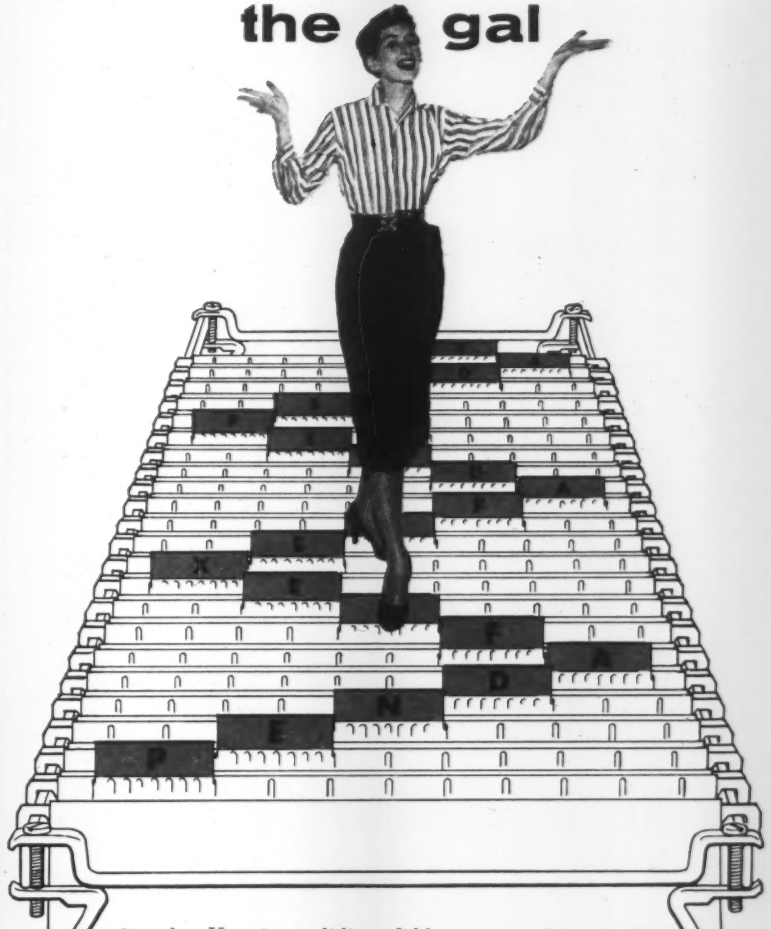
New Uses for Graphite

Commonly thought of as inherently brittle, graphite, one of industry's major refractory materials, is now available in a flexible form—fibers. The new graphite material, which can easily be woven into a cloth, should greatly add to graphite's numerous industrial applications. In either cloth or fiber form, for example, it could become a reinforcing material for laminates intended for high-temperature service.

Graphite fibers are the result of a 25-year research effort by the National Carbon Company, the nation's major producer of this crystalline form of carbon. Rayon and other

POTENT PROBE: *The largest radioactive source yet released to industry is mounted inside this Picker radiograph machine at Cooper Alloy Corp., Hillside, N.J. After the "Cyclops" is correctly aimed at heavy, expensive stainless steel castings under X-ray inspection, the cobalt-60 pill is automatically dropped into working position from a heavy lead container. Of course, all personnel are then outside the two-foot thick concrete walls. The rays penetrate the heaviest steel castings to register any imperfections on X-ray film.*

How PENDAFLEX® gives more miles to the gal



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NEW TWIST IN GRAPHITE: *Normally brittle graphite, now available in fiber form, can be woven into a strong cloth, as shown. The National Carbon product has wide application in the electronic, chemical, metalworking industries and in missiles.*

fibers are converted into graphite fibers at 5,400° F by a patented process.

Since graphite is an electrical conductor, the new graphite cloth makes an excellent heating element for applying heat to industrial processes or for protective clothing to be worn in subzero temperatures. Because it is easily fabricated, it can also advance vacuum-tube design. Since graphite is self-lubricating, the new cloth makes an excellent packing material for high-temperature service, such as jets. Conveyor belting for hi-temp process equipment is another possibility. The new fibers can also be plated with metals, suggesting other potential applications. Experimental quantities of the new cloth are available at $1.50 a square foot.

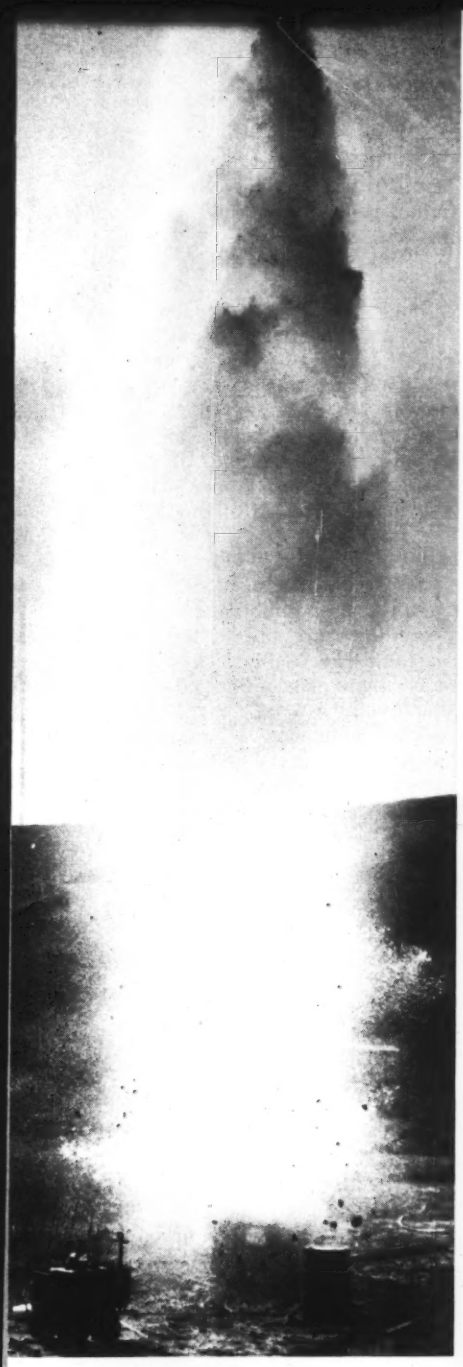
Clocking Materials Handlers

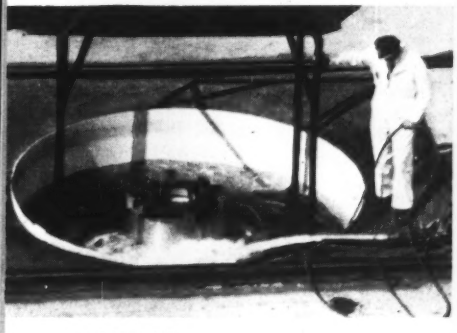
Utilization of fork-lift and grab trucks and other materials handling equipment should be increased inexpensively by means of a new clock-like instrument that measures and records loads and distances travelled. Fitting out a machine with a $350 "Truck-O-Meter" will enable the user to fix rates for drivers.

Information provided by the meter will also help establish the needs of any department that requests additional equipment.

The performance recorder was developed at Tube Turns, a division of Chemetron Corp., and will be made and marketed by the Institute of Modern Management, Inc., under a licensing agreement. —M. M.

Industrial Boom in Gunpowder





SO MANY spectacular technological advances, stimulated by military needs, are sparking exciting civilian applications that a healthy little business boom based on an old military standby—gunpowder—could easily be overlooked. Explosives, of course, have been used for decades in construction, and mariners have long been familiar with cartridge-powered lifeline pitchers. But in the past few years, a new crop of useful explosive-powered devices has popped up.

Most widely used of these is the stud gun (see DR&MI, January 1959, page 55). With this handy portable tool, which uses blank cartridges, a construction worker can fire studs or eyes into heavy steel sheet or concrete every ten seconds. With conventional tools, it might take the same high-priced worker fifteen minutes to drive a stud, especially into the overhead or in blind spots.

The stud gun may be the first of a family of cartridge-activated tools for industry. Cartridges can be used to power guillotine-type cutters for heavy cable, fence-pole drivers, and jacks for heavy trucks or off-the-road vehicles. In plants, cartridges can close or open distant valves either by remote control or automatically in case some dangerous condition occurs in the pipeline.

Explosive forming (see photos at left) is one of the hottest developments in the metalworking industry and has many implications for other industries. Shock waves created by dynamite or nitroglycerine can instantaneously work the toughest, most brittle metals into precision shapes that are impossible, extremely difficult, or very time-consuming to produce by conventional techniques.

FILLING *the water pit at the high energy forming facility at Ryan Aeronautical Company, San Diego. Next, die, metal blank, and explosive charge are lowered into the water. When the charge is detonated, the water is driven against the blank, instantaneously forming it against the die, which may be made of light materials. The water then sprays up into a geyser (top photo).*

At the Boeing Aircraft Company in Seattle, engineers are experimenting with explosives as a means of accurately sizing fuel tanks for the Bomarc missile. The tank is assembled by welding, followed by a strength-giving heat treatment. No matter how carefully the tank is handled, it always warps a little. The warpage would affect the flight of the missile at supersonic speeds because the tank walls are also the outer skin of the big bird.

After the heat treatment, the tank is placed in a sizing die and filled with water. An explosive is then lowered into the tank and detonated. If the correct type and amount of explosive is selected, the tank comes out perfectly smooth, unwarped, and formed to an accuracy of .001 inch.

Boeing is also thinking of using explosives to punch burr-free holes in thick metal plates, fuse dissimilar metals, and ceramic-coat metals.

Many companies are understandably reluctant to work with explosives. A number of men have been killed by improperly handled stud guns. However, the latest models contain safety features that prevent them from being fired into the air. The remaining danger is that the operator might mistake some thin surface for concrete and fire a stud right through it.

Several California companies today specialize in designing cartridge-activated devices for special military production or maintenance uses. They are Beckman & Whitely, of San Carlos, and Holex, Inc., and McCormick & Selph Associates, both of Hollister. Another expert is Earl M. Wintermoyer, of Armour Research Foundation, Chicago.

Gunpowder is dangerous stuff in the wrong hands. But, when placed in trained hands and used under proper supervision, it can be as big a boon to industry as it has been a scourge to mankind. —M. M.

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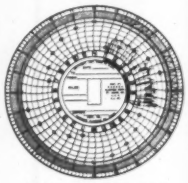

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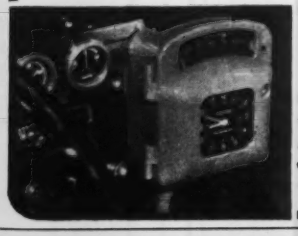

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MAKE IT YOURSELF?
continued from page 55

price? What pre-production costs will be incurred in make-ready—breaking in new equipment and hiring or training new workers?

If the comparison still favors making, is this investment in new facilities the best use of the company's working capital? What other uses could be made? How will tying the money up in a facility limit the company in the future? Finally, after all factors are considered, is the saving big enough to survive the tax bite? If not, are there other considerations which dictate making instead of buying?

Judging the intangibles

So far we have been sticking close to factors an accountant can estimate. More important, but harder to weigh, are the indirect influences of the decision on company profit and return on investment. It is here that good managerial judgment is essential. In weighing a make-or-buy decision, consider these points:

- How much protection is needed against a supplier's inability to deliver?
- Can existing management and administrative expenses be stretched to cover a make operation?
- Is the company willing to assume the risk of obsolescence or share it with the supplier?
- Will the morale of present suppliers be damaged by a make decision?
- Can the company expand profitably? (See box on page 55.)

Where is the company headed?

Our own company, American Motors, has been growing so fast that we have had to do a lot of thinking about these long-term, intangible factors. We have been forced to think through what kind of company we want to be.

THE AUTHOR • Roy D. Chapin, Jr., is executive vice president and general manager of the automotive division of American Motors Corp. Son of one of the founders of the Hudson Motor Car Co., Mr. Chapin entered the automobile industry in 1938 as an experimental engineer at Hudson. He subsequently worked in production planning, accounting, car distribution, and sales administration. He became treasurer of American Motors in 1955 and was elected to his present position the following year.

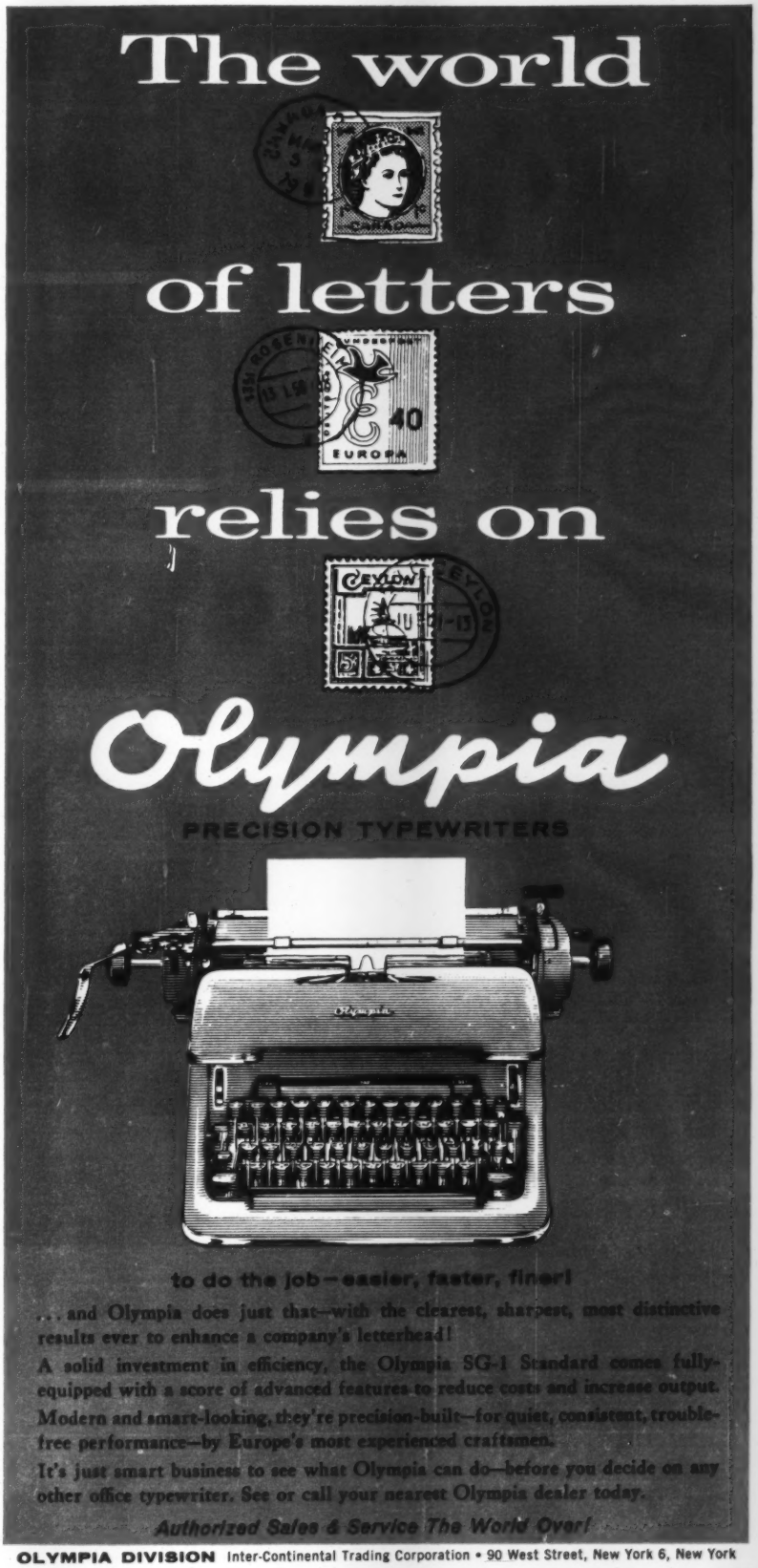
Fundamentally, we believe that we should stick to our own business of making automobiles and appliances and develop cooperative arrangements with a corps of suppliers who will stick to their businesses and give us the benefit of their management, their experience, and their research. Whenever the cost comparison is about even, we lean toward giving the business to a supplier. We want much of our capital to remain in a "liquid" position. Flexibility, the ability to move faster, is one of our real assets. The automobile industry is highly cyclical, and we feel we must guard against inflating our fixed charges by "over-investing" in facilities.

Our industry is also dynamic. Cars change. Parts change. Processes change. We do not believe that we can do *everything* better than *anybody*. It is, furthermore, a matter of historical record that suppliers have produced more technological breakthroughs than automobile manufacturers. The total research resources of all the suppliers of our industry far exceed the research resources of car manufacturers. We do not believe it is either possible or wise to concentrate under one roof all research on the many components that go into a car. Many minds, many enterprises, are the safest insurance of fruitful innovation.

We also believe that many of our suppliers ought to be able to produce more efficiently what they know best how to do. At the very least, we need them as a check on the efficiency of our own operation. We're for letting the best man win—and keeping as many as possible in the race, for that's how speed records are broken.

This is our approach, based on our location in the automobile industry at this time and our company style. Others don't and probably shouldn't do as we do.

Many elaborate methods can be employed to arrive at a make-or-buy decision. Most of these, presumably, would be based on known facts, but most of these must also necessarily include so many variables and considerations that the final determination is heavily influenced by judgment. In other words, once you have assembled as much information as has reasonable significance, you probably will find that the ultimate decision depends on the exercise of common sense. END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With development of new port facilities for the city of Guayaquil, one of Latin America's leading industrial and commercial centers, additional opportunities for investment are opening up in Ecuador. The new port, expected to be completed September, 1962, is being financed by a $13 million loan from the International Bank for Reconstruction and Development and will feature a 31-foot-deep channel at low tide and modern dock facilities. These, plus a mile-long barge canal and a new four-lane highway, will put ocean-going ships within a few minutes of downtown Guayaquil. Guayaquil already handles about 90% of Ecuador's imports and 60% of her exports.

These facilities add greatly to the attractiveness of Ecuador for business and industry. The nation's agricultural diversification helps rank it as a major exporter of food products and provides a sound base for its economy. Ecuador exports not one or two, but four major crops: bananas, coffee, cacao and rice. Furthermore, its vast forest resources are relatively untouched.

Ecuador welcomes foreign capital and new investment is going into development of the country's extensive mineral deposits. Earnings are freely convertible and the currency has been stable over a long period of years.

Empresa Eléctrica del Ecuador, an investor-owned electric utility serving Guayaquil and the interior city of Riobamba, is keeping pace with Ecuador's growing demands for electricity. In 1958 the company increased its generating capacity by 40%.

For further information on opportunities for investment in Ecuador and your copy of a brochure, "Investing in Ecuador", write Vice President and General Manager, Empresa Eléctrica del Ecuador at the address below, or Area Development Section, American & Foreign Power Company, 100 Church Street, New York 7, N. Y.

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FOREIGN COMPETITION
continued from page 64

man companies have recently received large manufacturing orders from their own governments for electronic air navigation equipment developed by our U.S. laboratories.

What kinds of management personnel should U.S. manufacturers provide when they set up operations overseas?

When American personnel go abroad for the first time, I believe they need time for readjustment of viewpoints and practices. We have found that our best results have been obtained by manning our manufacturing operations in each country exclusively with trained people who are nationals of the country in which they work, who know the laws and customs, and have the contacts.

What are the chief difficulties a U.S. business man faces in his personal relationships with business men overseas? Is it true that he may meet with resentment or hostility in certain areas abroad?

There are political resentments, without question, and at times anti-American agitation. However, I do not think true personal resentment against Americans exists to anywhere near the extent that is talked about. Where it exists, it can usually be traced to some individual whose conduct left a lot to be desired. I believe that it is generally safe to say that any American who goes abroad and conducts himself properly will meet no unusual resentments, so long as he keeps out of local politics.

To what extent does the management of a U.S. company doing business overseas have to get into national politics?

We try to stay out of the politics of other countries. When a business operates in a foreign country, it has to respect the politics of that country, its government, and its institutions. If you can maintain a neutral, non-political attitude in a country, your company is going to be better off in the long run than if you try to play politics.

Is American industry losing business overseas because of inadequate credit policies?

Yes, I believe so. This country

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needs to take a new look at some of its supporting operations for American business—"support" being a broader term than credit. There are three ways in which I am sure some foreign governments assist some of their own manufacturers selling abroad—by the remission of certain taxes; by guarantees or insurance of credit or through other financing to enable an exporting company to extend credits; and through trade agreements. I think that freer governmental assistance in the extension of credits and guarantees would be a substantial help to American business in the export field.

Do you notice any tendency overseas toward the increased formation of cartels? And if so, what effects might this have on competition with U.S. business?

I personally think it is inevitable that some form of what might be called cartels will develop. I am told that certain manufacturers in two foreign countries, for example, act as selling agents for each other's products. That could be called cartelization. And, for certain technical reasons, a company in one country might trade techniques with a company in another country and they might agree to manufacture one another's products in broad, predetermined areas. I am sure that other forms of cartelizing will develop as time goes on. Such cartels might well operate to the competitive disadvantage of American companies which, of course, must operate under U.S. antitrust laws.

Do you think technological advances in Soviet Russia are having any effect on the market? For example, is there any tendency to believe in the technological superiority of Soviet goods because of Soviet missile and satellite success?

None of our companies has reported any feeling anywhere that Soviet technology, across-the-board, is better than Western technology. We feel that the only real competition we might have from Soviet-manufactured items would be in the price area.

Is there any evidence that Communist economic competition is on the increase overseas? And, in your opinion, how can U.S. business meet the threat of economic warfare from the Iron Curtain countries?

We have suspected the Commu-

nists of selling at a loss in scattered instances in order to establish footholds in Western areas. There has been some indication that material or equipment manufactured behind the Iron Curtain has been offered outside those areas at prices so fantastically low that either it was priced at a loss or on a government-subsidized basis.

U.S. business cannot afford to quote its prices to meet any competition it finds unless it, too, is subsidized. In specific instances where it is important for particular types of equipment to be kept in Western hands, a subsidy of our sales would be a good thing. But you run into a dangerous philosophy there which is contrary to our belief in free enterprise. It would be extremely difficult to prevent abuse of such a subsidy practice and to keep our Government from being roped into every kind of competition and from actually taking over control, through that practice, of large segments of private industry. Assistance through credits and guarantees, if they can be made reasonably easy to obtain, should take care of most needs.

From your long experience with management problems overseas, are there any general misconceptions on the part of U.S. business men that you believe need to be dispelled?

There are two things this country frequently forgets or does not realize. One is that the European countries as a group—not limited to the Common Market area, but including it—are technically capable of doing the same things we do, just as well as we do them.

The second is that now that the same group of countries is recovering from the destruction of the war they are in a position to manufacture well and efficiently, and the superiority of "American know-how" can no longer be taken for granted.

The fact is it's going to take a devil of a lot of work to maintain our competitive position, and complacence in that respect is a very dangerous thing for U.S. business men to cultivate.

We in ITT know from experience that foreign research is conducted on a very rewarding basis and that foreign manufacturing is done efficiently and well. Our U.S. managers know those facts and work hard to excel. This works to the advantage of both our domestic and foreign operations.

END

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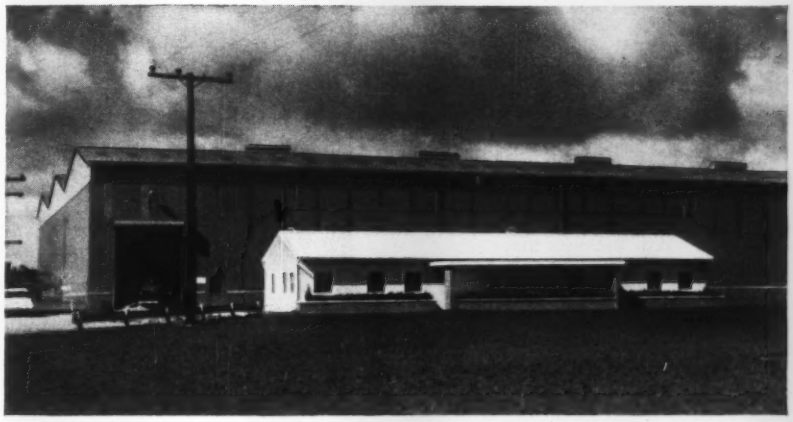

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- ✓ *Amusement parks offer new advertising forum.*
- ✓ *New twist in consumer testing helps buyers.*

MANUFACTURERS are becoming increasingly convinced that, in order to take a strong stance in a particular market, they must go all out in their aid to the retailer. This is especially true in such markets as consumer appliances, which have had a thoroughgoing shakeout in the past few years.

One of the companies that has fared well despite the intense competition is The Maytag Company of Newton, Iowa. By working closely with distributors, the company has gained a strong position in the coin-operated laundry market. For instance, its New England distributor—Mac-Gray Co., Inc., of Cambridge, Mass.—has opened 30 coin stores during the past five months. And the initial order for each store is twenty of the new Maytag automatic washers.

To provide a market for its product, Maytag, through its distributors, actually puts the operators of these unattended coin laundries in business. The distributor digs up qualified prospects who need $3,000 to $5,000 in cash and helps each investor rent store space, perform the needed alterations, and choose the auxiliary equipment needed in addition to the washers and dryers.

"But," says Stewart MacDonald, president of the distributor corporation, "we don't just give them the key to the store, shake their hands, and say, 'Good luck.' We keep an eye on them. A successful store is our best means of attracting new investors."

Since the coin laundry business is new to all the operators, the distributor bands them together in the Maytag Coin-A-Matic Cooperative Association. Guided by distributor personnel, the group meets once a month to discuss promotions, maintenance, user trends, competition, and advertising.

"As a group," says Bill Ulchak, owner of a coin laundry store in Somerville, Mass., "we've been able to tackle problems and come up with solutions that we could never have handled on our own."

Says another store owner, who had run a retail appliance store for fifteen years, "Through the association, I've gotten to know the business as well as anyone. So I'm making plans to open another store soon."

Profits in Playland

It's reported that a sanitarium patient, invited to come along on an outing to Disneyland, replied disdainfully, "No, thanks. I've got plenty of hallucinations of my own." Nevertheless, millions of less troubled folk are flocking to this new type of amusement park, which is as different from the old honky-tonk amusement park as widescreen from silent movies.

Next month an even larger version

WOULD-BE *coin laundry owner confers with Stewart MacDonald, president of Mac-Gray Co., Inc., appliance distributor.*

ON OPENING DAY, *the new owner's wife gives advice to a customer, but normally the store would be unattended.*

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of the Hollywood-type park will open outside Boston. The 80-acre Pleasure Island will recapture the seafaring past of New England with a recreated 19th century fishing village, a replica of Moby Dick which patrons can pursue in whaleboats, a "Wreck of the *Hesperus*" complete with man-made hurricane and whirlpools, and other fanciful farragoes.

This new type of recreation center —which some observers expect to attract $3 billion in consumer spending by 1965—also has caught the eye of industry. Companies are investing heavily in permanent exhibits in these parks to tell their story to the American family out for a day of fun.

For instance, H. P. Hood & Son, Inc., the largest New England milk company, will take visitors on a tour of an authentic New England dairy farm in decorated surreys pulled by a farm tractor. Pepsi-Cola Bottling Company is putting together an old Western saloon which will dispense its product. The retailing company of Joseph Breck & Sons, is planning to get its story across with an authentic general store of decades past.

Other similar parks are also under construction or have just opened in other parts of the nation. The Dallas Center will recreate Civil War battle scenes. Visitors to Denver's Magic Mountain will relive the experiences of the grizzled trappers and miners of the Old West. And the Pacific Ocean Park near Santa Monica offers spectacular marine exhibits.

When Buying Is Child's Play

Companies are seeking varied approaches to the $5 billion toy market, which is expected to increase markedly during the next decade. And they expect greater gains if—as in other markets—the design of the product is aimed more directly at the tastes of the ultimate consumer.

They are coming to recognize that many of the toys on the market today are based on what grown-ups think a child would like.

Among those who are helping to solve this problem is Max Hess, president of Hess Brothers Department Store in Allentown, Pa.

"Why," he wants to know, "does Junior get tired of most of his toys within a few days after he receives them? Are his toys really suitable for a child his age, and are they suited to his individual capacities?" Hess is not going to teachers, child psychologists, or parents for the answers. He is going to the children themselves, on the theory that if they don't know what they want, no one else does.

The store is gathering groups of children, ranging in age from eighteen months to twelve years, to play with a selection of toys while hidden movie cameras capture each play session.

The films will be studied by the store's buyers so that they can better recommend the right toys for children of each age group. In addition, a small group of youngsters will accompany buyers to New York toy manufacturers to play with new toys before they go on the market. The buyers will order only what the children like best.

The results of the year-long study will be published in a pamphlet and distributed to parents and toy manufacturers.

In contrast to this approach, a New York toy manufacturer, Mattel, Inc.,

WHILE *the hidden movie camera grinds away, children try out new toys in a market research experiment at Hess Brothers Department Store. The five-year-old cowboy ignores the toys that intrigue the tinier tots and devotes his attention to the sign identifying the group of children who come to the store to provide guidance for the store's buyers.*

Underclothes in a Can

Canned clothes have passed their market test with a high mark, according to the American Can Company. Although in sealed, opaque containers, the clothing items outsold the same products packaged in conventional transparent packages by two to one. Results of the tests held in four Eastern supermarkets point to a new, untapped market in packaging.

---

has turned to motivational research interviews among both children and adults to find which kinds of toys sell best. After plumbing the psyches of scores of interviewees, Dr. Ernest Dichter concluded that in purchasing toys for their kids, adults often think in terms of goals that are unimportant to children. According to this study, parents see the toy gun merely as an imitation of the real article, with all its destructive implications. But, says Dichter, children view the toy gun as a prop for taking on such make-believe roles as cowboy or policeman. And more important, through gun play the child works out the frustrations and aggressions that are an inevitable accompaniment of the process of growing up and learning how to get along with others.

Which approach will sell more toys? That's for the kids and their rich uncles to decide.

Selling the Salesmen

Unless a salesman is sold on the product he handles, his efforts to sell others are an uphill struggle. The Continental Coffee Company of Chicago has hit on a way to create real confidence in the product its salesmen handle.

At every district sales meeting in each of its 25 sales districts, salesmen sit down to taste four cups of coffee, not knowing which contains the company product. After sampling each, the salesmen are asked to give a writ-

whether you want a yard or a mile

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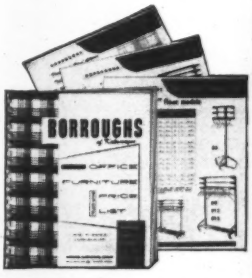
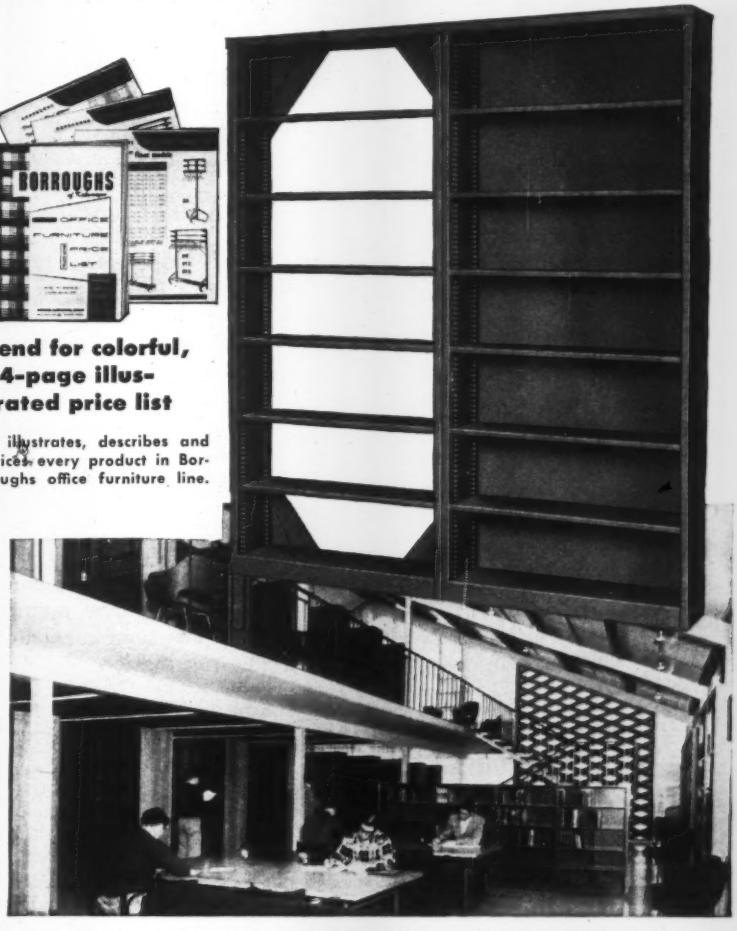
From a yard (one 36"-wide unit), to a mile (1760 units), Borroughs can meet your company's library shelving needs to perfection . . not only in quantity, but in quality and features too. For instance . . there's a choice of heights, 42", 84", 90" . . single or double face, open or closed back units (open back units have corner bracing) . . 9¼"-deep shelves are adjustable on ¾" centers without bolting . . a range of 4 modern colors includes spring green, dark green, gray, and fall tan, in electrostatically baked-on enamel . . optional book stops that slide any place on shelves . . Many more advantages could be listed here, but why not get the full story by sending for complete data.



Send for colorful, 24-page illustrated price list

It illustrates, describes and prices every product in Borroughs office furniture line.



Borroughs library shelving installation at Concordia Senior College, Fort Wayne, Indiana, comprises a total of 350 standard and special units, or one-fifth of a mile of shelving.

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OF KALAMAZOO
A SUBSIDIARY OF THE AMERICAN METAL PRODUCTS COMPANY OF DETROIT
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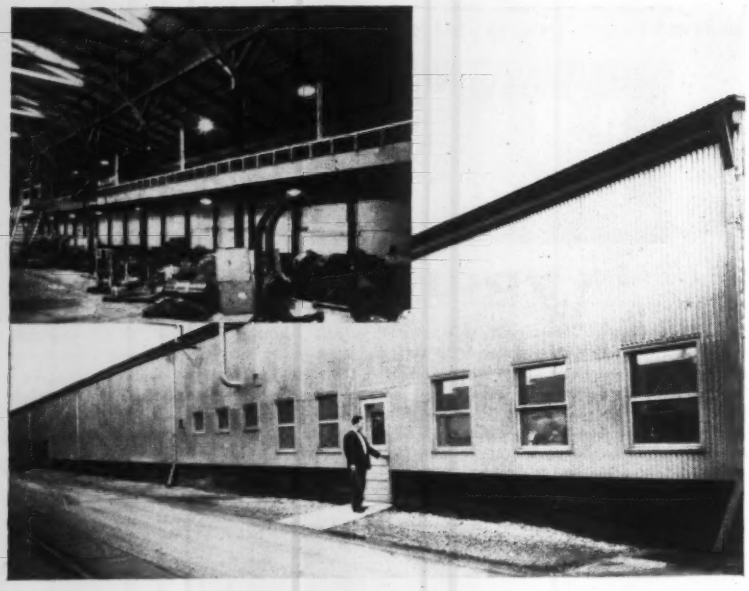

BUILDING TIME:
7 Weeks
COST: $2.95 a square foot

This 56 ft. x 234 ft. industrial storage and maintenance repair shop was built in only 7 weeks. It provides office space and has a 15 foot balcony on either side. Siding and roof are corrugated aluminum. The floor is concrete.

Because it was built with Koppers Poles, pressure-treated against decay and termite attack, this building will stand for generations with practically no maintenance.

Koppers pole-type buildings cost ⅓ to ½ less than conventional structures . . . go up fast . . . are strong, sturdy, enduring. Before you build, investigate Koppers pole-type construction. Mail the coupon today for complete information.

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KOPPERS **POLE BUILDINGS**

ten evaluation of each brew, after which the results are announced to the meeting. Continental's coffee is almost always picked by a big majority.

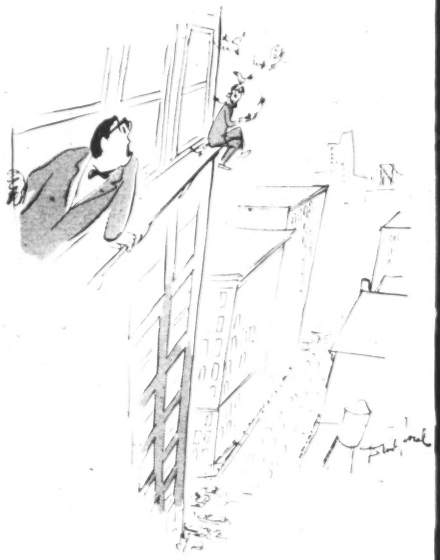
In addition, the results of all district meetings are summarized, and copies are given to the salesmen for their use as a sales aid. The company is happy with this method of instilling in the salesmen the confidence they need to do an effective job. It's also an accurate field check on the quality of the product, for, as any sales manager knows, his own salesmen are frequently his severest critics.

Migrating Sales Staffs

How can a company that sells a seasonal product—such as outboard motors—make the full use of its sales force during the slack season? One company—the Marine Products Division of McCulloch Corp., Minneapolis—makes its salesmen migrate like birds. Salesmen in the Northern states went South to Florida for several weeks last Winter to stir up business. And the company is planning to reverse the migration this Summer and move up Southern salesmen for the warm-weather months in the North.

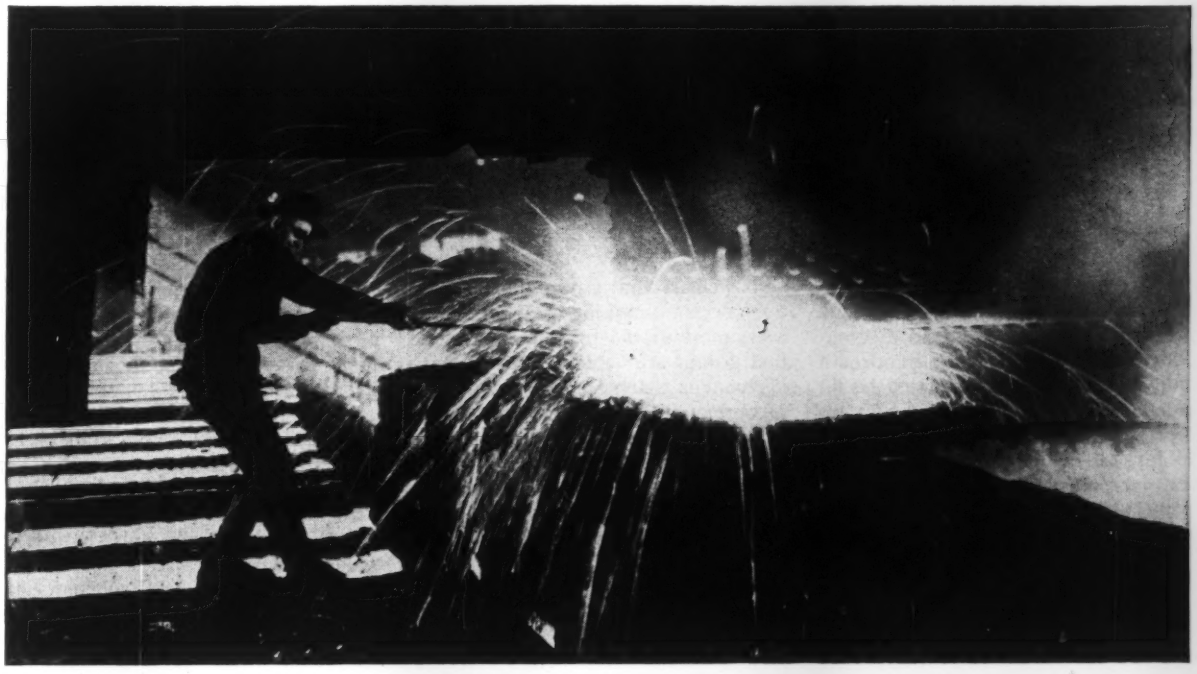
Shock Value

When a store in Ogden, Utah, ran this ad—"Indecent Raincoats, $12.47"—they sold like the proverbial hotcakes. But it was all a mistake; the copy should have read "iridescent." —T. K.



"Please, Higgins, on your own lunch hour—and in the park."

THE U.S. TREASURY SALUTES THE PEOPLE IN THE STEEL INDUSTRY



—who buy Savings Bonds and strengthen America's Peace Power

Men and women who earn their living in the steel industry can take great pride in knowing that their crafts and skills contribute, through raw material supplies, to nearly every other great industry in the United States. They can also be proud of the help thousands upon thousands of them are giving to America's Peace Power through the purchase of U.S. Savings Bonds.

Through regular purchase of Shares in America, these thrift-conscious people are reinforcing their own security after retirement, and establishing current reserves for such worthwhile family projects as new homes, education and travel.

If your company has not put in a Payroll Savings Plan thus far, you can start immediately. Just telephone your State Savings Bonds Director and accept the help he wants to give you. Or write to Savings Bonds Division, U.S. Treasury Department, Washington, D.C.

J. K. Thomson is shown here at his work in one of the great steel mills of this country. Like thousands of his fellow craftsmen, Mr. Thomson is making regular use of his company Payroll Savings Plan to contribute to the Peace Power of his country.

Do group decisions pay off in today's complex business organization? Here's what 83 top industrial leaders have to say.

Group Decision Making: PRO and CON

"IF A company is run by group decisions, its life is limited," says the president of a large industrial company soon to celebrate its hundredth anniversary. Although most of the 83 company presidents replying to a recent DR&MI survey wouldn't go quite so far, all but a handful have some reservations about the increasing trend toward group decisions in industry.

The presidents—three out of four of whom are heads of industrial companies among the 500 largest in the United States—were asked: "Are several minds necessarily better than one? Or are committees, conferences, and other collaborative management groups often less efficient than individual executive action?"

Out of the 83 replies to this question put to the entire DR&MI Presidents' Panel, only four presidents flatly declare that groups make effective decision-making bodies. However, most of the presidents contend that groups are valuable aids to management in assembling decision data, recommending alternative courses of action, and providing support and implementation after a decision is made.

Probably every business man has his own stock of jokes and sayings that point up the inadequacies of decision by committee. A number of these are quoted by the men surveyed. For example: "A camel is a horse created by a committee." "You can't raise a baby by committee." "A conference is a group of people sitting around talking about something they ought to be doing." There is, of course, a serious, if one-sided, viewpoint behind this flippancy: committee decisions may be slow, cumbersome, and inadequate.

Committees, company presidents widely agree, serve some useful purposes in the decision process. They make available to management the expert opinion and advice that are often needed in decisions involving technical problems. This kind of information also helps to broaden the knowledge of other officers. One president of a leading industrial company points out that group participation in major decisions is not peculiar to business and has evolved naturally from the complexity of today's world. The Government, he says, even tends to conduct our foreign affairs and manage our currency on the basis of group thinking and planning. "No man, alone and singlehanded, can possibly run a large corporation today," he adds. "He requires specialists to assist him by providing information and even opinion on questions within their special fields so that reasonable and reasoned decisions can be reached. The real problem lies in making decisions promptly and effectively, and this must be the responsibility of one boss. Decisions cannot be reached by majority vote."

What groups do best

Aside from the specialized knowledge and relevant facts they may contribute to a decision in the making, groups are useful—the presidents agree—for discussing, reviewing, discovering, and recommending alternate solutions to a problem. They also may help to clarify action and coordinate policy. And almost every president participating in the poll says that group meetings perform an important communications job — not only by making management's problems known, but also by providing support for the action ultimately de-

"Teamwork"—or Bandwagon Behavior?

The tendency to conform nearly doubles when people work at a group task, as opposed to an individual endeavor, a University of Michigan experiment showed. Each of the persons tested first was individually presented with a set of questions and with what he was allowed to believe were the answers given by other subjects. His test score showed how many times his answers were influenced by the response of the others. The same people were then given a task to perform as a group.

The groups were further subdivided into people who felt attracted to a group, and presumably were more sensitive to group pressures, and into groups of individuals with "low group attraction." Regardless of the individual tendency to conform or to be independent, more people tended to conform when acting as a group than when acting alone.

For example, in individual tasks, the "high attraction" group conformed 37 per cent of the time; and acting as a group, they conformed 62 per cent of the time. The individualists conformed 32 per cent of the time acting alone and 50 per cent of the time acting as a group.

cided upon. As one man puts it: "I feel that all important matters should be concurred in by all top management in order to have full support and company unity." And another man observes, "Today's successful company blends individual executive action with group action."

Tool for decision

Most company heads see groups as a tool for—rather than an alternative to—decision making. One comment sums up this majority view: "Committees and conferences serve a useful purpose in the field of information, communication, and motivation but are frequently misused as decision-making devices. An executive is hired for his judgment and leadership and paid to make decisions. He should not pass the buck to a committee. But, by the same token, he should not attempt to make decisions in a vacuum without the benefit of competent staff advice."

But while there are a number of clear and generally accepted advantages to group thinking on company problems, there are a number of dangers inherent in the very nature of a group. Among those mentioned most frequently are these:

- An actual group decision would diffuse or dilute responsibility, and there would be no clear individual accountability for the decision. The chances are, say the presidents, no group decision could be effectively carried out or followed up. But assuming that the group making a decision could and would take the necessary action to see it through, would the decision itself be the best possible? Not many presidents think so. Groups, they seem to feel, stifle initiative and produce decisions based on the lowest common denominator of thinking.
- Some top executives, like some observers of the business scene, also believe that groups themselves tend to inhibit originality and stifle initiative, so that the above-average thought is silenced by timidity or a desire to conform and win group approval.
- There is also, the presidents tell DR&MI, a real danger that executives who delegate decision making to a group may in reality be evading a problem or deferring a decision. It is necessary, says the president of a large instrument manufacturer, to "guard against any committee activity which encourages key executives to

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lean on the committee, instead of making decisions which they are expected to make for themselves." Another man puts it more bluntly: "Committee rule is merely a means for a weak management to escape responsibility."

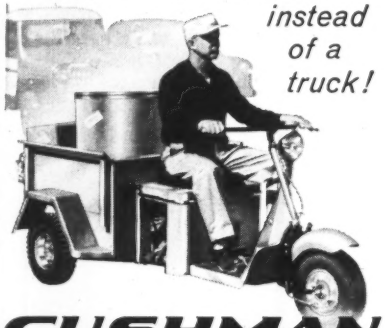
One president, like others in his group, whose opinions echo the findings of researchers into group dynamics, doubts that there really is "any such thing as a committee decision. Regardless of the group, there is always one strong individual who makes the final decision and sways the group to unanimity." Most people who have been members of any discussion or deciding groups are familiar with this phenomenon of emerging leadership. For example, a DR&MI reporter, observing the first public participation in the American Management Association's electronic-decision "game," saw this occurring among a remarkable group of executives. The four- and five-man competitive teams involved in the "plays" were made up entirely of company presidents. Very quickly, one man appeared to take over leadership of each team—some by rather formal election and agreement, others by the force of individual personality.

Reading the boss's mind

One president in the recent DR&MI survey has this comment to make: "In my opinion, it is idle to talk about group decisions anyway. For the most part, they do not exist in practice. Most such groups, if they have the decision power even in theory, tend to take on the boss's view; and most bosses are astonished at the ingenuity of subordinates in finding out the boss's opinions. Otherwise, there will develop within a group a dominant voice (boss substitute), or the group will disintegrate."

The consensus of the DR&MI survey of company presidents is that groups themselves are not the most effective decision makers, but are most useful as instruments in assembling data, exploring the decision area, recommending and deliberating the best courses of action, in communicating upward and downward the elements involved, and in creating a sense of participation that makes the ultimate decision more effective. But on one point there is almost universal agreement: one man must make, and be strictly accountable for, the decision itself. —K. H.

Send a *Truckster* instead of a truck!



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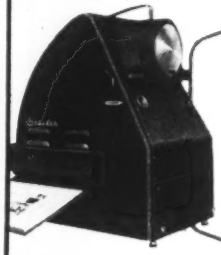

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The Glidden Company people report "Burroughs Accounting Machines paid for themselves within a year, on this application alone."

Yes, you can throw any tough accounting job, or any number of them, at a Burroughs Accounting Machine. It has the built-in speed, the versatility and automation to produce figure-facts—and savings—on the double.

Whether your own accounting problem calls for a little help or a lot, Burroughs has the data processing equipment—ranging from advanced accounting machines to giant electronic computer systems—to bring you results fast.

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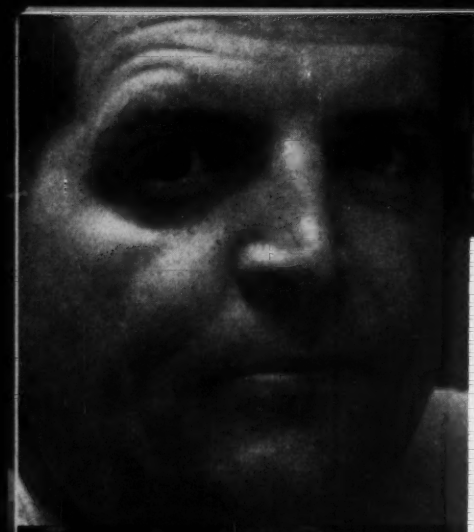


We boosted our business with USS "T-1" Steel

THESE ARE THE WORDS of Mr. Robert Matlack, Executive Vice President of E. Brooke Matlack, Inc., the nation's largest over-the-road liquid transportation firm. He goes on to say, "We really stunned our competition when, a few years ago, we decided to retire our old twin-barrel propane tankers made of carbon steel, and turned to 'T-1' Steel outfits. At the same time, we were able to drop our freight rates by as much as 15%. Business boomed."

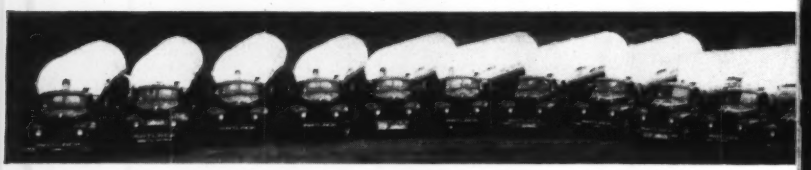
Matlack knew that USS "T-1" Constructional Alloy Steel had a much higher yield strength than carbon steel. This would give an excellent weight advantage which could readily be translated into profit dollars. So they ordered five blimp tankers, made of "T-1" Steel, from the Butler Mfg. Co., Kansas City, Mo.

The new "T-1" Steel tankers weighed only 19,500 pounds empty, against 24,000 pounds for the old tankers—a clear saving of 4,500 pounds. They could carry from 500 to 700 extra gallons of propane on each trip. Results were so good that they increased the fleet to 18 tankers.

Why not get the facts on how USS "T-1" Steel can improve your competitive position. "T-1" Steel's great strength (100,000 psi minimum yield strength) helps trim costly dead weight from structures, pressure vessels, equipment of all kinds. Its outstanding resistance to impact abrasion has increased service life in abusive applications up to 10 times longer. Its extraordinary toughness, even down to 50° below zero, has caused heavy-duty equipment to last longer without breakage. And "T-1" is weldable, too.

Write for our booklet, *USS "T-1" Steel*. Remember, too, that U. S. Steel makes three brands of High Strength Steels—USS COR-TEN, MAN-TEN, and TRI-TEN—each having specific advantages for equipment that must be built strong but light. United States Steel, Room 2801, 525 William Penn Place, Pittsburgh 30, Pa.

USS, "T-1," COR-TEN, MAN-TEN, and TRI-TEN are registered trademarks



United States Steel Corporation – Pittsburgh
Columbia-Geneva Steel – San Francisco
Tennessee Coal & Iron – Fairfield, Alabama
United States Steel Supply – Steel Service Centers
United States Steel Export Company

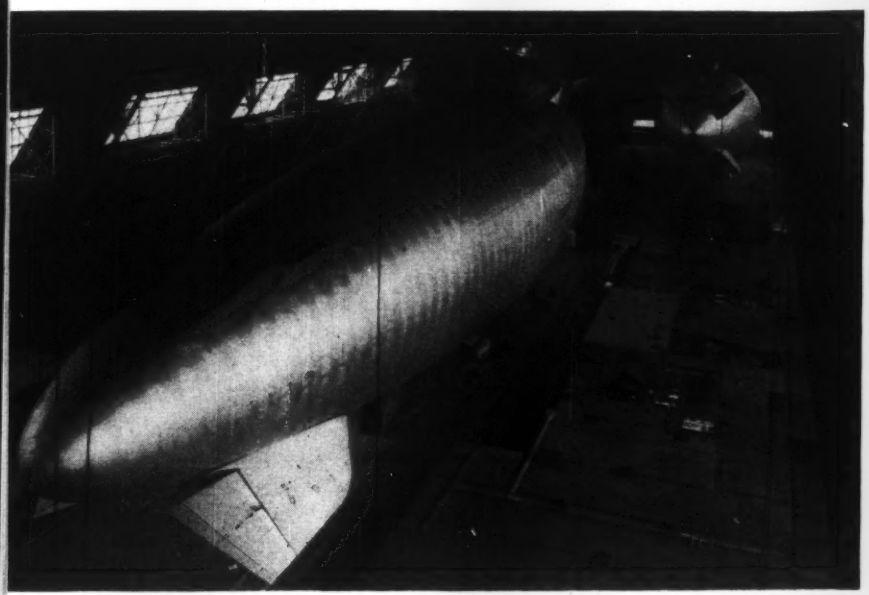
United States Steel

USS

Turning Back the Clock

Dust the cobwebs off an antiquated product design and you might—with luck and good sales sense—find solid profit potential underneath.

LOOK, NO STEERING WHEEL: *This 1900 revival, sold by Dyer Products Company, Canton, Ohio, is mainly purchased for promotional purposes. It usually stops traffic when on its way to deliver light parts or goods to customers.*



GOODYEAR HAS PUT *its huge airdock back into full operation turning out airships for the nation's Airborne Early Warning and anti-submarine defense operations.*

TO ACCOMMODATE the substantial number of Americans who are continually infected with the virus *nostalgia sentimentalis*—and to meet some very real needs—a number of hard-goods manufacturers are finding it profitable to resurrect a variety of out-of-date products. Reviving the styles of decades or generations past is standard operating procedure for the clothing industry, but now gas lamps, antique or near-obsolete autos, crank-type wall telephones, and outmoded airplane designs are coming back on the market. Most of the manufacturers are comparatively small, although one big company, American Motors, last year brought back a small car that had been dropped several years before.

Quite a few of these ancient designs are essentially decorative or promotional gimmicks, but a number of the others serve real customer needs. One company has revived the old 1930 Ford tri-motor transport plane because of its very short take-off and landing requirements. Working from original plans furnished by the Ford Motor Company, the Hayden Aircraft Corp. of Bellflower, Calif., is planning to build these slow-pokes for some air freight lines and companies that operate in sparsely settled areas.

Electric cars, which disappeared from American highways decades ago, are being revived by a San Diego manufacturer. Stinson Aircraft Tool & Engineering Company is banking on higher gas taxes to create a demand for their $2,200 "second" car, which can be driven 70 miles between rechargings. American Motors is also experimenting with an electric car.

The Cleveland Vehicle Company is going into production on a $4,500 electric delivery truck, once popular with milkmen. They already have 42 orders from dairies, bakeries, and utilities for these quieter vehicles.

continued on next page

To you who have 16mm sound films:

Now beginning to bring spectacular sales results are *showings to individual prospects,* with a TV-screen-type TSI projector.

Here, *your film creates the mood to buy*—in office or home.

The prospect will ask questions. Your salesman answers, concentrating on closing the sale—in office or home.

It's giving a new surge of enthusiasm, energy, and eagerness to sales forces.

Are there exposure-possibilities like this, now opened up by modern projectors, that you're missing?

TSI's 16mm sound projector line is the most extensive available. Let us mail you suggestions to get PLUS USAGE from your films!

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At least three companies are manufacturing early-style automobiles. F. W. Bliss Company, Canton, Ohio, has a 1903 model, called "Surrey," that comes complete with Goodyear bicycle tires. The car is distributed by Dyer Products Company, Canton, either in kit form or, for $200 more, assembled. Competitors are the American Air Products Corp. and Starts Manufacturing Company, both of Fort Lauderdale, Fla. If these three companies spark a boom in antique car manufacture, customers won't have to worry about tires. The Firestone Rubber Company, Akron, has been making a complete line of tires for antique cars since 1946.

One of the most interesting revivals is the Kellett autogiro. In the late 1930's, when this half-airplane, half-helicopter was introduced, its principal market—crop-dusting aviation—was small. Before the autogiro had a chance to develop, World War II killed the market and halted development. After the war, thousands of slow surplus trainers were converted for crop spraying. Today, the 5,000 biplanes used for crop dusting are wearing out. Since very few of these planes are produced nowadays, the Kellett Airplane Corp., Willow Grove, Pa., is reviving its autogiro.

Most people think the Hindenburg disaster killed off the lighter-than-air ship, but the Goodyear Aircraft Corp., Akron, is again building a number of airships for anti-submarine warfare and for the nation's off-shore radar picket line. This blimp has a special advantage for the latter job: the radar antenna spins *inside* the gas envelope.

The piggyback revival

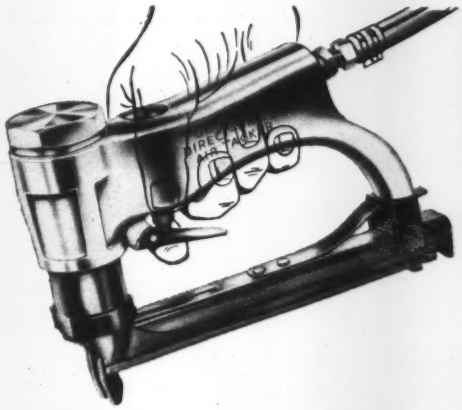
Suspended services can also be revived profitably. Piggyback carrying of truck trailers on railroad flatcars, currently a big trend in transportation, was first offered in 1884 by the Long Island Railroad. Loaded farm wagons were carried on flatcars. While the dray horses were carried in stock cars on the same train, the drivers rode as regular passengers. The service ran until 1893 before it was suspended. In the 1920's, the Pennsylvania Railroad revived piggybacking, this time of milk tank trailers into Philadelphia. However, good roads soon killed off this service. Various other lines tried piggybacking, but all but the New Haven sooner or later gave it up. Today, piggybacking seems here to stay.

LATEST *production methods are used at Firestone to make tires for antique cars. The tires have the famous old "no-skid" tread.*

Containerization is another transportation cost-cutting system that has caught the eye of industry. Yet it is also a revival, of more ancient vintage than piggyback. In 1834, a through service was organized between Philadelphia and Pittsburgh involving an alternation of rail and canal service. To save time and avoid frequent reloading of freight and baggage, the canal boats were built in sections that could be hauled up on railroad flatcars. A great success, this containerized system remained in service until 1857, when it was bought up by the Pennsylvania Railroad and abandoned. By that time, an all-rail system had been built.

Some materials are experiencing belated resurrection. For instance, terne, a popular roofing material of a century ago (Jackson's Hermitage is roofed with this tin-lead coated steel), is once more appealing to architects. The Follansbee (W. Va.) Steel Company is offering terne in long, wide seamless sheets. Lead-base paints bond to it very well.

Although the revival market is hardly likely to hit the multi-billion-dollar level, it does offer a welcome opportunity for slow-moving organizations. The day may even come when a company will create a new executive position—Director of Old Product Development! —M.M.



Leading photographic equipment firm solves precision fastening problem at lower cost with new DUO-FAST Bench Stapler. Air-operated tool leaves both hands free.

Your plant, too, can cut costs with DUO-FAST Automatic Stapling

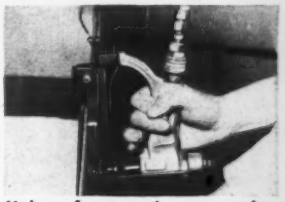
World's largest automobile manufacturer speeds production by tacking body interiors with DUO-FAST Air Tackers. The skill and accuracy are built-in.

Shown here are just 4 of the many ways DUO-FAST Automatic Stapling is reducing costs for others. Yes, and you, too, can save with DUO-FAST.

The first step? Simply *analyze* your present fastening methods . . . particularly those now being done with brads, screws, tape or glue. You'll find mighty few that can't be done faster, neater or easier with a DUO-FAST Stapler or Tacker.

Let your nearby DUO-FAST Representative help you make this analysis now. With over 150 staple-tacking models to draw on, he can show you the safe, accurate, *automatic* way to streamline your fastening methods.

Free maintenance. And remember: DUO-FAST tools carry our famous Free Service Guarantee. For a Free 28-page Manual of ideas you can use, return the coupon below.



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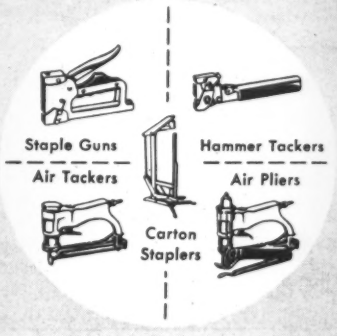

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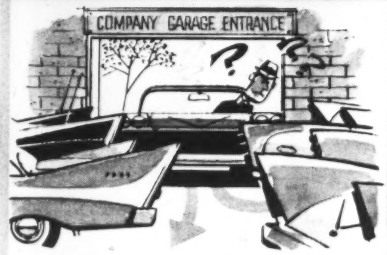
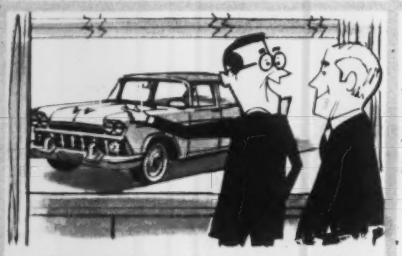


"What's more, Fawcett, we'll have to build an extension to the company garage to house these monsters. And our salesmen can't fit them into parking spaces."



"Cheer up, H.B.," declared Fawcett. "Let's switch our fleet to Rambler. We'll save money on first cost and operating cost. Because Rambler has top resale, we'll save too, when it's time to trade or sell."

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EXECUTIVE BONUSES . . .

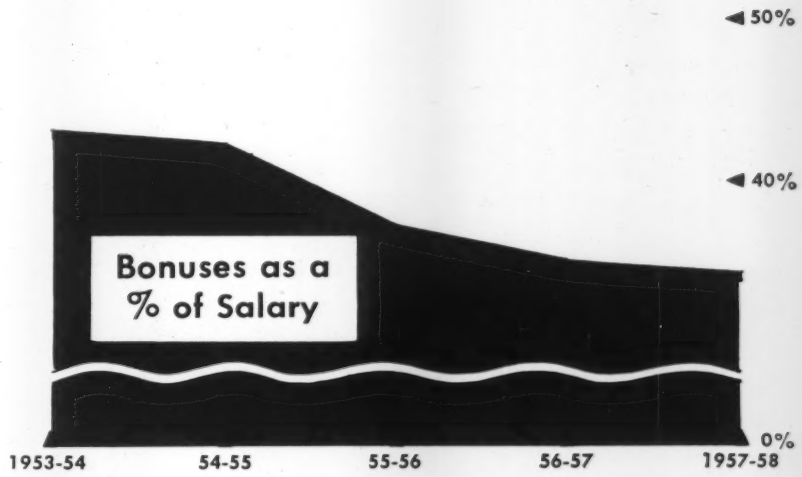
. . . take a slide

BONUS payments are attractive incentives in good times, but they subject recipients to uncertainty during recession periods.

That's the evidence of the latest comprehensive survey of executive pay plans by the American Management Association. Last year, AMA's findings show, management bonuses, which are almost always dependent on company profits, fell far enough during the 1957–58 recession to keep the top men, as a group, working for about the same pay they received the year before, despite the fact that salary boosts continued practically as usual.

This is the second year since AMA began conducting its annual studies of top executive compensation nine years ago that the total compensation of the executives surveyed has not continued the year-to-year rise of about 5 to 6 per cent.

And it may be considered that the movements of management compensation reported in the survey are fairly typical of American industry as a whole, for some 3,500 companies in 55 different industries and twenty size groups supplied the information on compensation for more than 11,000 executives.



Falling profits dent bonuses

Seven out of ten of these companies enjoyed an increase in sales, but only half that number succeeded in raising their profits at the same time, compared to between 70 and 80 per cent in normal years. The average for all 3,500 companies was a 7.7 sales increase and a 2.8 per cent drop in profits—small, it is true, but enough to cause a dent in bonuses, and with it a revelation of how vulnerable the executive who receives an important part of his compensation in bonus form may be to even a minor setback.

Hence, the recession may well have accelerated the gradual trend toward reducing that part of executive compensation which varies with profit. In 1953–54, bonuses accounted for nearly 17 per cent of the total compensation of the executives surveyed, while in 1956–57, when profits and total top management compensation were still going up, they amounted to only a little over 14 per cent. And in 1957–58, they fell to 13.4 per cent.

Fewer cuts of the bonus pie

When profits are smaller, some consultants recommend that companies keep the top men happy by dividing the available funds among fewer people—that is, by dropping some of those down the line out of their incentive plans altogether.

But according to Dean Rosensteel, director of AMA's compensation service, who has been in close touch with a great many companies on these matters, not many concerns seem inclined to take this way out. They are too conscious of the effect such a move would have on the morale of the lower-level executives—and perhaps, if the news got around, on the entire organization. Rather, he finds, companies are intensifying their efforts to arrive at compensation plans that will be effective over the long term in producing optimum results: by attracting and holding competent executives and providing the maximum incentive to better performance.

As of last year, the compensation pattern for the executive group as a whole—exclusive of stock purchase, group insurance, and similar plans—was 79.7 per cent as salary, 13.3 per cent as bonuses, and 7 per cent as company contributions to retirement funds. In 1953–54, it was 77.3 per cent in salary, 16.8 per cent in bonuses, and 5.9 per cent in pension benefits. More than 70 per cent of the companies now have pension plans for their employees, in contrast to only 58 per cent in 1953–54. Practically all the larger companies are included in this number. On the average, the pension contributions amount to about 10 or 11 per cent of salary of top executives, a figure that has been fairly constant for the last five years.

Trend toward stock plans

Stock options, stock purchase plans, and deferred payments, about which the survey collected data for the first time this year, are a part of top management compensation in a little more than a third of the com-

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panies, and here again the larger organizations are taking the lead.

Some 65 per cent of the big companies, as against 12 per cent of the smaller ones, have such a plan.

Average figures tell little about what is happening in individual companies, of course. But it is evident that salary cuts—though there were a few in industries particularly hard hit by the recession—were not general.

Of the more than 11,000 positions covered by the survey, some 11 per cent paid lower salaries last year than in 1956–57, but this does not mean that the same number of executives actually received salary cuts. New men, promoted or hired from the outside, may well start at lower salaries.

In 1955–56, when the companies surveyed increased their sales by 10.7 per cent and widened their profit margins by an average of nearly 25 per cent over the previous year, decreases were reported for 10 per cent of the executive positions.

For nearly half the positions there were salary increases, ranging from 5 to 15 per cent in most cases, and this figure, too, shows very little change from previous years. In 1956–57, despite a rise in profits of 5 per cent and about an equal increase in total executive compensation, salary increases were given in only 49 per cent of the cases, and in 1955–56, the figure was 48 per cent. In 1954–55, on the other hand, when profits rose slightly mainly because of a change in the Federal income tax rate (the advance in sales was only 2.2 per cent), increases were recorded for only 38 per cent of the positions covered.

The "big three" functions

Even more constant over the years has been the status of the various departments in the company organization as measured by the compensation of the men who head them. After the president, the heads of finance, production, and marketing (though not necessarily in that order) still hold the lead, despite the competitive efforts of executives in charge of other functions.

If any department does succeed in reaching a generally accepted status equal to that of the traditional mainstays of the industrial world, Rosensteel believes, it is most likely to be research and development. Already there have been signs of its advancing status—in some cases to the very top echelons. —ALICE SMITH

EXECUTIVE BOOKSHELF

Brief Reviews of New Business Books

The Case for Free Enterprise

THE ROOTS OF CAPITALISM *by John Chamberlain. D. Van Nostrand Company, Inc., 120 Alexander St., Princeton, N.J., 222 pages, $5.50.*

A spirited defense of American capitalism, documented by a history of the men, the ideas, and the technology that shaped it, plus a plan for "dismantling" the welfare state.

Portrait of a Leader

HERBERT HOOVER AND THE GREAT DEPRESSION *by Harris Gaylord Warren. Oxford University Press, 417 Fifth Ave., New York 16, 372 pages, $7.*

A historian projects the aims and achievements of the depression President against the background of the social and economic forces which defeated the best efforts of his staunchly conservative administration.

Ethics and the Executive

BUSINESS AND RELIGION: A NEW DEPTH DIMENSION IN MANAGEMENT *edited by Edward C. Bursk. Harper & Brothers, 49 E. 33rd St., New York 16, 212 pages, $4.*

Should business seek spiritual as well as profit gains through human relations? This is the question posed by a group of business leaders, teachers, and theologians in a searching analysis of the ethical and moral responsibilities of management.

Managing the Team

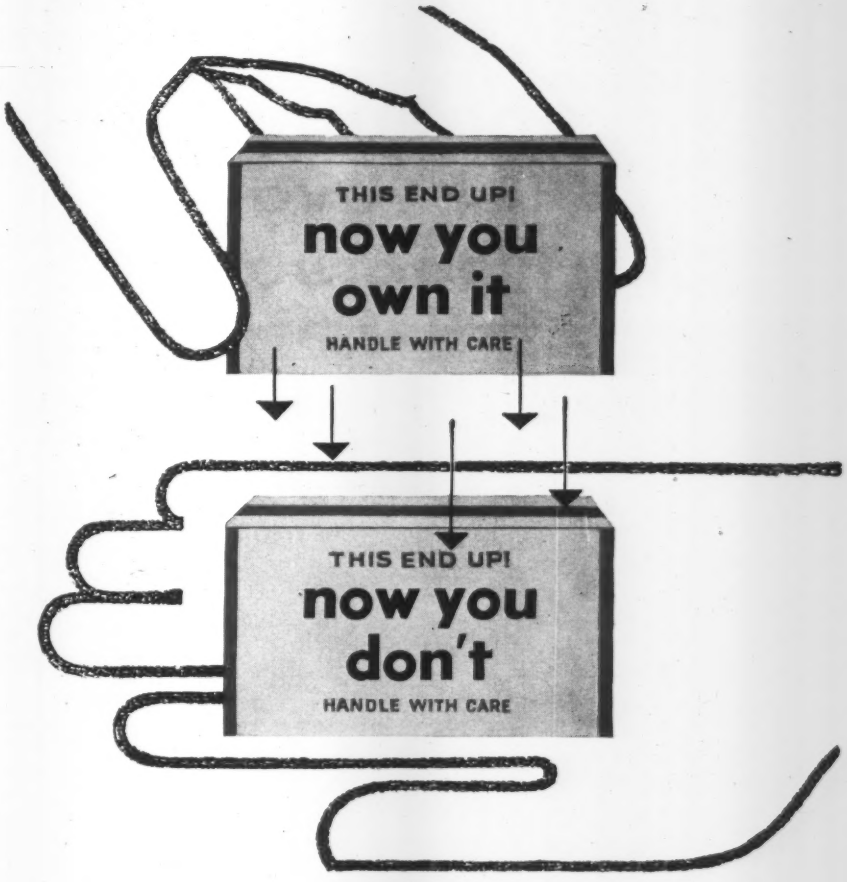
EXECUTIVE'S GUIDE TO HANDLING PEOPLE *by Frederick C. Dyer. Prentice-Hall, Inc., Englewood Cliffs, N.J., 208 pages, $4.95.*

Practical how-to-do-it advice on developing a positive "executive style" and maintaining effective relations with people above and below, written for the executive at or near the top.

What the Job Is Worth

WAGE AND SALARY ADMINISTRATION *by Lawrence C. Lovejoy. The Ronald Press Company, 15 E. 26th St., New York 10, 502 pages, $7.*

An executive textbook on the techniques of fitting compensation to the job and how it can be employed to maintain a stable, productive workforce, control costs, and provide uniform management policies.



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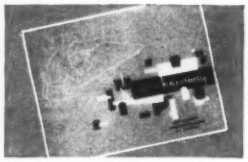

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EQUITY FINANCING

continued from page 61

The nation's commercial banking system has been of major assistance to smaller companies. Traditionally, however, the commercial banker lends money for only a short period and must know at the outset how the borrowing company can make repayment. This often means a lien against assets or receivables and other restrictions which, however necessary, are likely to hamper management in capitalizing on future profit opportunities.

When money is needed for such long-term purposes as growth or debt consolidation, but equity financing is not feasible, various types of long-term loans may be considered.

The most economical method of financing partly depends on the size of the loan that is required. A mortgage of more than $1 million will cost between $8,000 and $10,000, simply for the preparation of an indenture and other legal papers. Obtaining a smaller loan or note often is simpler and proportionately less expensive.

For money needs ranging up to $5 million, private placement is often the best plan. It is less costly because there is no need to qualify under the Trust Indenture Act. There is no secondary market problem, as there may be with a small bond issue. (If only a limited market exists for a company's bonds, a price may be established which doesn't adequately reflect the company's credit standing.) The investment firm knows the legal and fiduciary requirements of various institutions and can tailor the particular loan to make it more marketable.

Aid from institutions

Institutional investors are continuing to be interested in private placements. Besides lending money to smaller business, they are increasingly involved in the equity financing of these growth companies.

THE AUTHOR ● H. Stanley Krusen is senior partner in charge of the underwriting and institutional departments at Shearson, Hammill & Co., a nationwide investment firm which specializes in the underwriting of medium-size growth companies. He also serves as a director of five industrial companies. Mr. Krusen was graduated from Cornell University and attended the New York University School of Business Administration.

Some insurance companies, for instance, have separate departments to make "equity loans" to smaller businesses. They make such loans to render a basic economic service or to provide future investment outlets as the companies grow and prosper. Insurance companies are stimulated also by the likelihood of increased taxation of income from the securities they hold and the possible future needs of variable annuities. Increasingly, insurance companies are seeking capital gains as well as income from common stocks.

Mutual funds, too, have a growing, though very specialized interest in the equities of smaller companies. The size of their investments and the need for liquidity, however, limit their interest primarily to securities with an active market.

Some of the more aggressively managed pension funds are beginning to buy smaller company equities. One large pension fund, for instance, recently bought $500,000 worth of securities in each of several small electronics companies. Ordinarily, its purchases would be limited to situations where a much larger dollar investment could be made.

The smaller company's decision to seek public financing, when based on careful investigation of the company's needs and goals and the services offered by investment firms (see box, page 61), can be an important step toward promoting its future growth.

END

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"Now Is the Time for Tax Reform"

PAUL WOOTON, *Contributing Editor*

Representative Wilbur D. Mills

A MORE equitable tax system, free of revenue-draining loopholes and damaging economic restraints, is the goal of the man who heads the powerful House Ways and Means Committee in which all tax legislation originates.

Representative Wilbur D. Mills, frequently mentioned as the man most likely to succeed Sam Rayburn should the veteran speaker of the House of Representatives retire, outlined his ambitious tax revision program in a recent DR&MI interview.

"Our present tax laws are out of step with today's economy," the Arkansas Democrat declared. "The present system is contributing materially to many of the present difficulties in specific industries and is having an effect on employment, economic stability, and growth."

Why wait for a surplus?

Mills disagrees with fellow legislators who want to wait until a budget surplus is amassed before undertaking a thoroughgoing tax revision program. He sees "no wisdom in deferring tax reform when the tax structure impedes economic growth."

Equitable tax laws are more imperative, Representative Mills believes, when the tax burden is heavy. "Taxes must be imposed in a way that will interfere as little as possible with individual initiative and with the expansion of industrial capacity. We want all businesses to grow. Our tax laws must not handicap free enterprise, discourage venturesomeness, or stimulate concentration of economic power."

There is an increasing tendency toward what Mills calls "erosion of tax sources"—through the extension of tax preferences to more and more groups. He wants to see intelligent broadening, rather than narrowing, of the tax base and the "elimination of unjustifiable tax differentials and preferences." He regards the repeal of some of these preferences as essential to "a reduction in rates and a restoration of equity and true progressivity."

Chairman Mills wants an equitable tax law that takes into consideration the economic impact and the revenue needs and which presents a minimum of difficulties for the taxpayer and the administrators of the law.

The revision of the Internal Revenue Code made in 1954 was, Mills believes, a long step toward a better tax structure and provided major improvements. However, it has not quieted the demand for further changes. Mills says he has no objection to a "realistic and unemotional" appraisal of the code to remove existing complexities, to reduce opportunities for tax avoidance, and to provide more individual and business incentives. He recognizes that the broad tax system under which $80 billion was collected last year is bound to contain many deficiencies.

Confusion creates hardships

Complexity, Mills concedes, is one of the more easily justifiable criticisms of the Code. A House subcommittee has delved deeply into the technical phases of the present law and the manner in which the Code is administered and enforced and will recommend the elimination of unintended hardships and advantages. However, while the Committee can change the law, it has no authority to change the implementing regulations.

Even the smallest businesses now have to call in advisers to help them interpret the tax law, particularly the provisions dealing with trusts and partnerships. Mills also finds that substantial changes are needed in the estate and gift tax provisions. "Taxpayers now are encouraged to find tortuous ways to dispose of property."

Taxes as a sales barrier

"It must be acknowledged," says Mills, "that a vast amount of discrimination has invaded the tax law." But he adds, "If our enterprise system, operating through the impersonal price mechanism in free markets, is to assure the most efficient use of our economic resources, we must be sure that tax considerations do not counteract the market place's attraction to consumers, investors, and business executives."

Mills also emphasizes that "to the extent that the tax system responds automatically to changes in the overall level of economic activity, serving to dampen inflationary pressures and to cushion recession movements, the need for fiscal and monetary action is reduced."

Simplicity in tax legislation eases the administrative problem and helps ensure fairness to taxpayers, Mills believes, while exceptions to broad

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rules only add to the difficulties of administration.

Representative Mills cites as bad features of the present tax law "discriminations between broad classes of taxpayers as well as between types of income, with earned income the loser in a battle between proponents of a tax policy designed to encourage investment and a tax policy designed to encourage consumption."

Exceptions to the rule

These are the principal tax preferences Mills says are eroding the tax base:

Exception of interest on state and local bonds; deductions for percentage depletion and expenses of expiration and development of mineral resources; special tax treatment accorded cooperatives, foundations, and charitable organizations; exemption of interest upon savings invested in life insurance; deductibility of personal consumption expenditures; income-splitting between husband and wife; use of multiple trusts, gifts, and family partnerships; the sanction given by the Code to defer compensation arrangements pending trusts and stock options; preferential treatment given by the Code to capital gains and "all of its multitudinous and artificial forms."

"I have an open mind," Chairman Mills says, "in connection with these various preferenees, but it is time for every one of them to be searchingly reexamined."

Behind Mills' tax policy is the fundamental conviction that "to pay for growing expenditure programs by continued deficits and inflation undermines our main bulwark protecting stability. It undermines the willingness of people to save. Such action impedes the nation's economic growth more than would an increase in tax rates.

"Increased taxes reduce private expenditures and cut down growth in the private sector of the economy. Government programs should be adopted only when they will make a sufficient contribution to national welfare to justify the corresponding loss of private growth."

Mills is "appalled" by the prospect of using high interest rates to make up deficits. "One lesson of the last few years," he says, "is the inadvisability of using credit policy as a crutch for inadequate fiscal policy."

END

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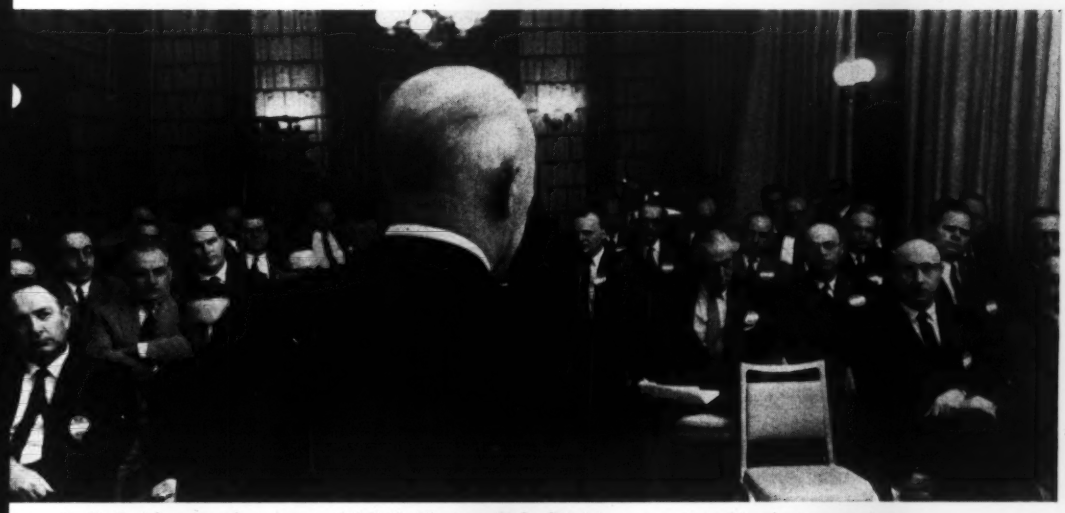

D. Y. Smith, general manager of RCA's Electron Tube Division, reports to his plant supervisors.

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Explaining management's policies, viewpoints, and goals to the lower management echelons of an organization with annual sales in nine figures is a tough problem in itself. When the organization is just one of many divisions of a $1-billion-plus company, it's even tougher. The men who run Radio Corporation of America's multi-million dollar Electron Tube Division think they've solved the problem by their annual 2,300-mile tour of the six tube-making plants in the Division.

This year the Tube Division management and its middle management groups had more reason than ever to value the headquarters-plant meeting tradition which was initiated thirteen years ago. Although the division had posted a good record in 1958, with profits up from 1957 despite a slight recession-forced sales drop, plant men were plagued by two worries, both stimulated by the accelerating trend toward miniaturization in electronics:

- How will miniaturization affect electron tube sales?
- How will the rush to microminiaturization affect the electron tube's future?

Spreading the good news

At each plant — in Cincinnati, Ohio; Marion and Indianapolis, Ind.; Lancaster, Pa.; and Woodbridge and Harrison, N.J.—D. Y. Smith, the Division's vice president and general manager, and his eighteen-man staff

DIVISION MANAGERS *Lee Holleran (left) and M. J. Carrol use travel time to discuss the plant problems they've observed.*

A PLANT *manager demonstrates a new lathe to Division staff visitors J. T. Cimorelli, Smith, and John B. Farese (left to right).*

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GUIDED BY *plant manager Norman A. Stegens (far right), top Division executives check a new production technique in the tube assembly department of the Cincinnati plant.*

supplied an answer that cheered the questioners. They gave the plant management groups a quick preview of the new RCA "Nuvistor" electron tube design, now in advanced development stages at the Tube Division's Harrison plant. The tubes are based on a new concept which RCA hopes will make possible mass production of scaled-down, more rugged, more reliable, and more efficient electron tubes.

Although commercial production of the tubes is scheduled for 1960 at the earliest, the news of the development and its implications for electron tube-making relieved the plant officials' concern over the future of the products they manufacture.

Business plus pleasure

The headquarters staff also outlined the Division's sales and profit prospects in a two-hour formal policy and planning session. Informal discussions during plant luncheons and plant tours preceding the formal business sessions permitted a man-to-man exchange of ideas among the Division managers and their lower-echelon counterparts. The business meetings were followed by social hours and informal dinners.

Throughout the business and informal sessions, the Division theme of "profits and progress in '59" got the big play. Staff administrators and their line contacts discussed the 1958 record and the 1959 outlook in office meetings before the plant tours, at hotel breakfasts, at plant cafeteria luncheons, during the tours, and at the social sessions that followed them.

Five days and nights of exposure to plant management's hopes, interests, problems, and worries gave headquarters management a pretty clear picture of the attitude of each plant executive toward company top management, Division management, and the immediate future. And, on the long train and bus rides between plants, the Division staff team examined and interpreted their impressions.

The Division staff's report to plant administrators included reviews and forecasts of RCA's over-all operations, as well as those of the Division. Getting advance information on sales and profit percentages for the past year helped the local managers feel a part of the top management team. So did advance information on upcoming new products and on sales and profit goals for the coming year.

Facts on the barrelhead

Reporting by the headquarters team was done individually by staff members. Smith reported on the over-all picture, past and future. His assistants covered their specific areas. For instance, profit figures came from Controller Morris Kalen. Planning Manager Lloyd Day, whose department planned and conducted the tour, outlined strategy for meeting new challenges. Purchasing Agent Tom Scanlon explained new techniques for savings in his field.

Chief Engineer G. R. Shaw, reporting on product developments, declared, "Eighty-two per cent of the electronic products we enjoy today

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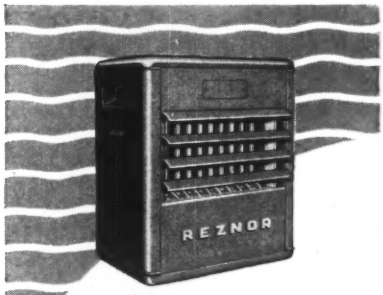

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were not in existence ten years ago." His reminder that "progress, profit, and prosperity all depend on change" served as a keynote for all the meetings.

The format for each of the five meetings—one combined meeting covered the Harrison and Woodbridge plants—was the same. A report by the plant manager led off. It contained detailed figures on the year's plant record and an outline of goals for the year ahead. Then, following Smith's introduction of his staff, Division headquarters department heads reported on the year's progress—or retrogression, if that were the case—in their areas. No basic facts or figures were omitted. Each report reflected top management philosophy and ended with a forecast.

An important aspect of these meetings was that they were attended by a large number of second- and third-echelon plant supervisors. For example, at a plant like Lancaster, which employs 4,000 people, as many as 350 line supervisors participated in the discussions with top Division management.

The inside story

And what is more, contrary to the customary practice of many other companies, plant supervisors in the RCA Electron Tube Division received a confidential breakdown showing exactly what their plant's productivity and profit contribution had been to the Division's over-all operations. The chief engineer in each plant, for instance, was told exactly how his plant stacked up against all others in the Division and what earnings contribution his plant made to the Division's and the company's financial health.

Individual Division staff members visit the plants on the average of every other month to keep communication lines open in between the annual tours. During these visits, the Division manager confers with his opposite number in the plant—e.g., Division personnel manager with plant personnel manager. This, of course, is in addition to almost daily communication by telephone tielines between Division headquarters and each of the plants.

Smith considers this year's plant tour "completely successful" and adds, "We think we succeeded in conveying our optimism about the electron tube industry to all the people who run our plants." END

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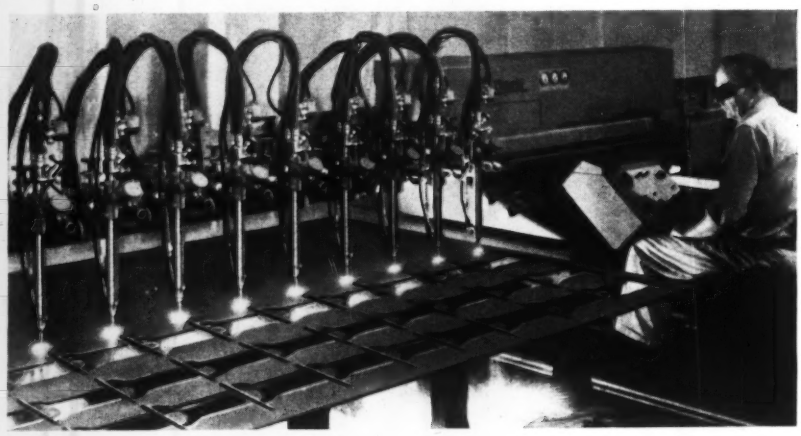
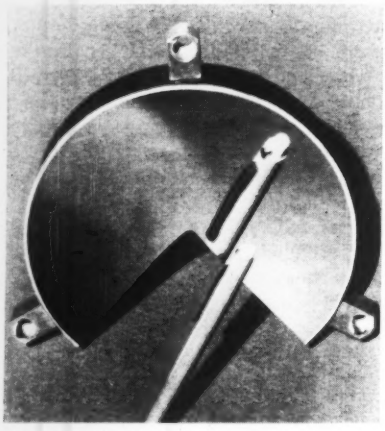
NEW PRODUCT PARADE

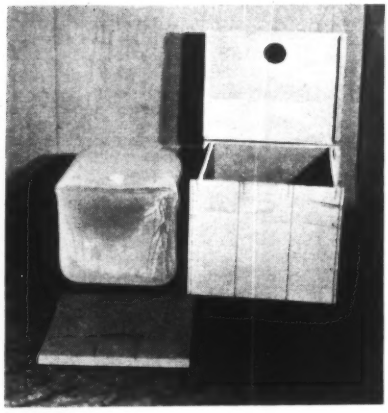
COPY CAT: Working from pencil sketches drawn to scale on plain paper, this flame-cutting machine will reproduce parts in metal. Standard models will take ten torches to cut widths of 10 feet; larger models will handle more torches. Linde Company, Division of Union Carbide Corp., 420 Lexington Ave., New York 17.





METAL MIRROR: Aluminum surface on an epoxy resin base makes this reflector many times stronger than conventional glass mirrors. Plastic backing allows direct casting of mounting fixtures or electrical and mechanical components. Production is both faster and cheaper. "Repli-Kote," Singer Military Products Division, 149 Broadway, New York 6.

DOUBLE PACKAGE: Designed to replace heavy, returnable glass carboys, this container for shipping liquids comes in two parts: a semi-rigid, cube-shaped polyethylene insert and an outer wirebound box. The plastic liner will hold up to 15 gallons of both regulated and non-regulated materials. Light weight saves on shipping costs. "Cubitainer," Hedwin Corp., 1600 Roland Heights Ave., Baltimore 11.



MOVING GOODS: Materials handling problems get a lift from new fork-lifts now on the market:

One truck travels sideways, making it capable of handling loads up to 16 feet wide in 8-foot aisles. It also tiers conventionally for use in narrower aisles. The machine is spark-enclosed to permit operation in hazardous areas. The Raymond Corp., 46-173 Madison Ave., Greene, N.Y.

Single-frame construction and a gear drive built as a single unit mounted in a vertical column give another truck high underclearance, making it particularly suitable for moving over steel ramps without hanging at the ramp peak. Over-all length remains constant in both raised and lowered positions. Barrett-Cravens Company, 826 Dundee Road, Northbrook, Ill.

Telescoping upright permits unloading from low-ceilinged railroad cars and truck vans and loading on stacks up to 18 feet high. This feature eliminates the need to change machines for the two operations. "Three-stage Upright," Hyster Company, 1003 Myers St., Danville, Ill.

EXECUTIVE AID: Interoffice telephone set has pushbuttons for up to ten numbers, allowing automatic calls without either dialing or picking up the receiver. A buzzer sounds when the call is ready. If the called number is busy, the phone signals the talker he is wanted and "remembers" to complete the call when the line is free. If necessary, the caller can interrupt a lengthy conversation with a plea for brevity. No other call can circumvent the priority of the pushbutton. "Executive Telephone," Tele-Norm Corp., 55 W. 42nd St., New York 36.

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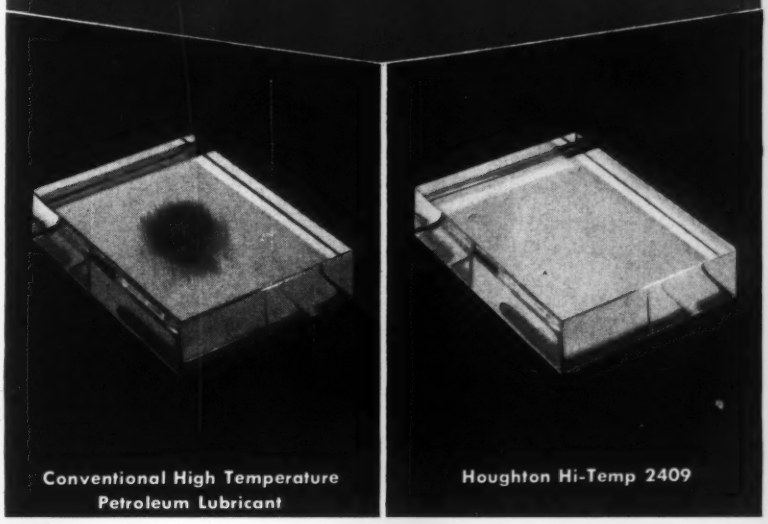
A Houghton Development in Lubrication Technology...

Scratch Test Proves NEW Hi-Temp 2409 Lubricates at 1000°F.



These two pieces of plastic were each rubbed with the residue of grease after it had been exposed to a temperature of 1000°F.!

This scratch test tells the story! The piece rubbed with *the lubricating residue of Hi-Temp 2409* is as clear as crystal! The piece rubbed with the hard, gritty residue of conventional high temperature grease is badly scratched.

This proves what happens to bearings that operate at temperatures from 600°F. to over 1000°F. With new Houghton Hi-Temp 2409 grease, bearing wear and breakdown due to inefficient lubrication is eliminated!

If you have a high temperature lubrication problem, it will pay you to investigate this new grease—Hi-Temp 2409. Call your Houghton Man for a demonstration or write E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia 33, Pa., for your copy of Houghton's new booklet on "Thermal Lubrication".

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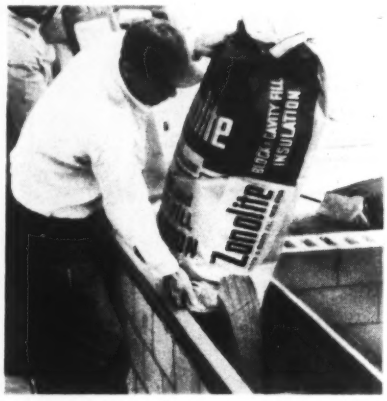
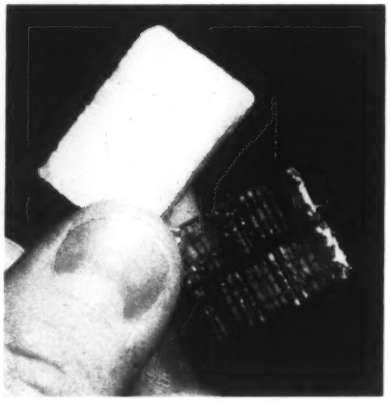
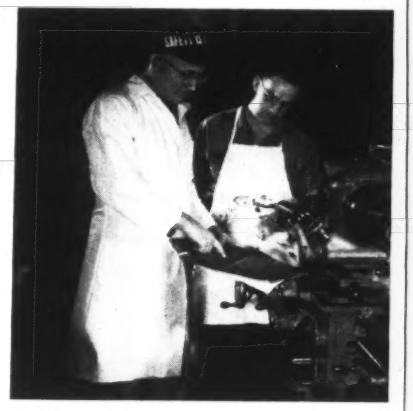


THROWAWAYS: Nonwoven material of textile fibers bonded between layers of cellulose wadding has been adapted for low-cost disposable coats and aprons by Ace High Division, Williamson-Dickie Manufacturing Company, Fort Worth 1, Texas. The material, which is water- and fire-resistant, can be tailored and dyed like cloth. "Kaycel," Kimberly-Clark Corp., Neenah, Wis.

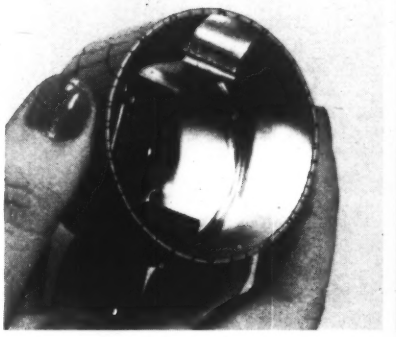


CLIP-ON: Aerosol container caps have a new look—on the inside. This cap has an internal spring clip which grips the can firmly and yet can be removed easily. Use of the cap requires no change in container design. "Spring-Grip," J. L. Clark Manufacturing Company, 2300 Sixth St., Rockford, Ill.

GRANULAR FILL: Low-cost, moisture-resistant insulating material fills cavities between masonry blocks and so helps reduce construction costs by replacing costlier insulation. Construction expense and time are also saved because of the fill's light weight —it can be poured from scaffold level. Free-flowing granular form insures filling of entire cavity. The Zonolite Company, 135 S. LaSalle St., Chicago 3.



MIGHTY MITE: Miniaturization gets another boost with development of micro-module circuits. These tiny circuit building blocks are less than one-third of an inch long. The "guts" of a radio, shown in the photo, take up less space than a sugar cube. Wall-type television sets and button-size batteries are possible future applications. Developed for the U. S. Army Signal Corps by Radio Corporation of America, Camden, N.J.



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NEW PRODUCT PARADE *(cont'd)*

FIND IT FAST: Magazine-load microfilm reader facilitates location of information needed quickly and often. Insertion of the film magazine starts the drive motor and lights the screen. Special coding on the film aids rapid spotting of specific data. "Lodestar Reader," Recordak Company, 415 Madison Ave., New York 17.

•

SPRAY IT ON: High-density polyethylene which can be sprayed on metals and glass is now available in limited quantities. The coated surface shows good freedom from pinholes and has high impact resistance and flexibility on metals. It can be applied clear or in colors. Plastics Division, Koppers Company, Pittsburgh 19.

•

TIGHT SQUEEZE: Electrical insulation in tube form shrinks under heat to form a tight coat. The abrasion- and chemical-resistant material is best used on symmetrical or gently contoured shapes. Irvington Division, Minnesota Mining and Manufacturing Company, 900 Bush Ave., St. Paul 6, Minn.

SPACE SAVER: New water cooler line conceals all plumbing within the cabinet. This not only eliminates exposure of unattractive piping, but conserves space—the cooler extends only 12.5 inches from the wall. The design allows for a standard trap with slip-type fittings, avoiding time-consuming soldering or threading. "Wall-Line," Water Cooler Department, Westinghouse Electric Corp., P.O. Box 2199, Columbus 16, Ohio.

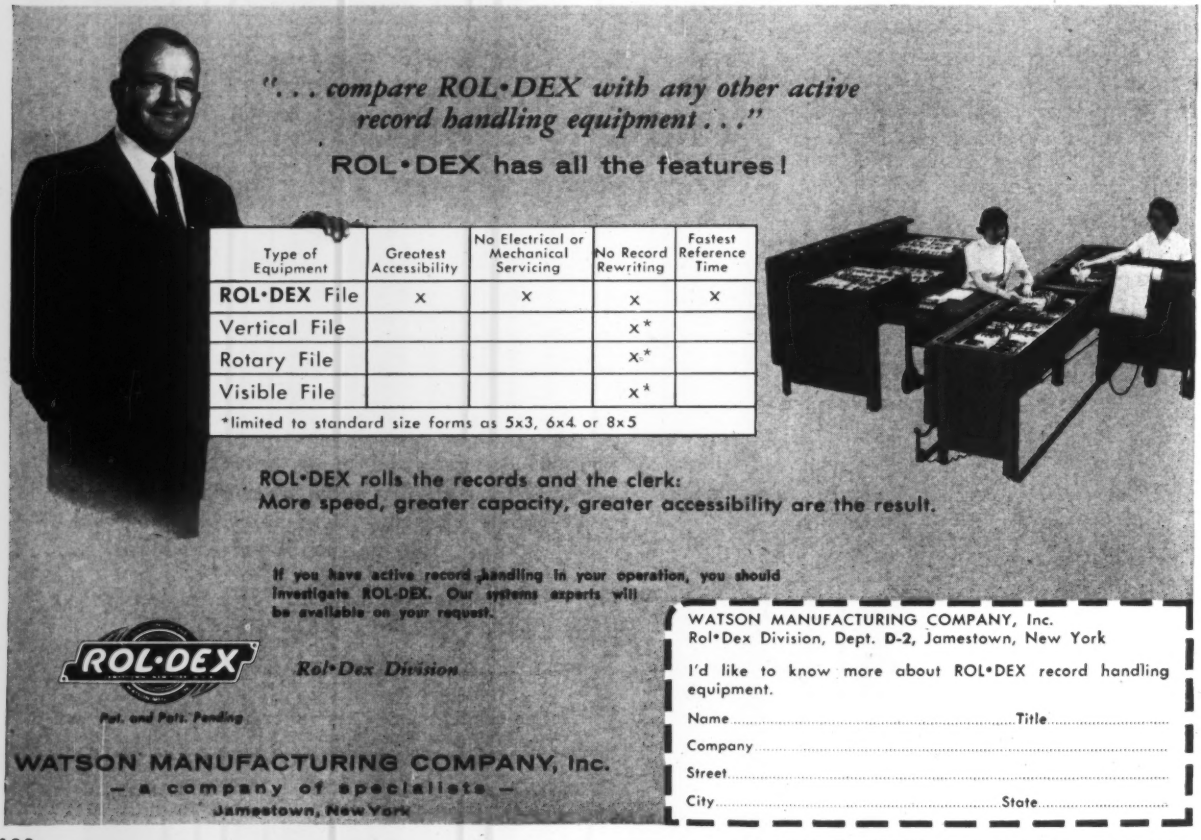
STURDY COPIER: New copying sheet threatens to make carbon paper obsolete. Like a sponge, it is made up of tiny cells, each holding a supply of ink. As duplicate copies are made, the paper "replenishes" the ink supply in each cell. Copies are permanent and smudge-proof, as well as uniform in color—the sixtieth copy is said to be as clear as the first. "Plastisol," Columbia Ribbon & Carbon Manufacturing Company, Glen Cove, N.Y.

•

COATING NOTES: Concrete floors in heavy-traffic areas can be finished or repaired with an epoxy resin surfacing which has extreme resistance to chemical corrosion and physical wear. The average repair layer will be less than a half-inch in thickness. "D.E.R. 334," Dow Chemical Company, Midland, Mich.

Another waterproof decking, made for use in less heavily traveled areas, has a companion product for lining tanks. This latter is odorless and fumeless, and has good resistance to steam, grease, and gasoline. "Horsey-Set," Horsey-Robson & Company, 551 Fifth Ave., New York 17.

—R. P.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Industrial Relations, 1959:

A Progress Report

Shrinkage in a good many corporate payrolls hasn't appreciably slowed the growth of personnel departments.

CUTBACKS in company payrolls don't necessarily mean corresponding reductions in personnel staff, judging from the findings of a new survey. In fact, corporate industrial relations departments generally are continuing to grow in size and importance despite any inroads on employment resulting from automation or the effects of the late recession.

Most industrial relations and personnel departments, the survey indicates, survived the recession with little or no reduction in strength. And companies planning to enlarge their departments this year outnumber those planning curtailments by more than two to one.

The survey, covering 500 companies—the majority of them (362) manufacturers—was conducted by Estep and Associates for *Industrial Relations News*. Returns came from all sections of the country, but the largest number were from the East and West Coasts and the industrial Midwest.

The big get bigger

A trend toward enlarging department staffs is particularly marked among the larger companies, those employing more than 6,000 people. Well over a third of this group reported that their departments grew between 1957 and 1958, in some cases substantially, as against about a fifth who stated there had been a contraction. And with the pick-up in business, about a sixth of the big companies were planning to enlarge their departments as against only a handful who foresaw decreases.

In smaller companies, decreases in industrial relations staff were more frequent, but in all size groups the majority either kept the department at pre-recession strength or added extra staff. For the 500 companies as a whole, answers to the question, "Has the personnel or industrial relations department in your company (or unit) increased its staff during the past year?" were divided as follows:

Increased slightly	16.4%
Increased substantially	4.6%
Is about the same	50.4%
Cut back slightly	20.4%
Cut back sharply	6.6%
No data	1.6%

Latest prospects in all 500 companies shape up as follows:

Increase planned	13.4%
Decrease expected	5.2%
No change expected	80.2%
No data	1.2%

Salary and status

Salaries of those answering the questionnaire—of whom most were heads of departments—ranged from less than $4,000 to around $40,000. The median was $9,000-$10,000 at the beginning of 1957 and probably is higher now, since nearly three-fourths said that they had received increases in that year.

Bonuses ranged from less than $500 to more than $20,000, and there were many who participated in stock option plans as well.

However, in a good proportion of the companies, especially the smaller ones, personnel managers have not yet attained the status which makes them eligible for all the types of "extra compensation" received by top-level managers. More than half the personnel managers in companies employing fewer than 3,000, and even many of those in larger companies, stated that no one at their level was eligible to participate in the stock option plan.

Moreover, the *IRN* survey shows that personnel executives may some-

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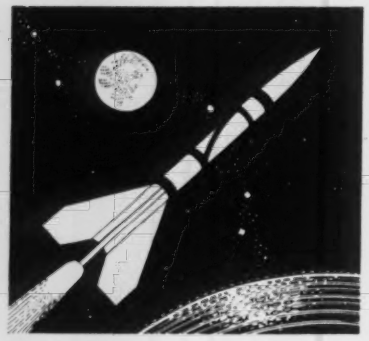

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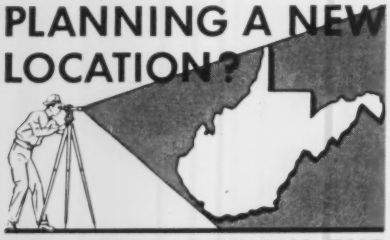

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West Virginia labor is a major asset when considered on three principal counts . . . available supply, quality, and wage levels. Increased mechanization in the coal industry has added to the already surplus of workers in the state. The bulk of The Mountain State working force are men and women who are accustomed to hard work and welcome job opportunities in expanding industry.

WEST VIRGINIA

We urge you to investigate The Mountain State. Write: Dan Cripp, Executive Director, West Virginia Industrial and Publicity Commission, State Capitol, Room DR, Charleston 5, West Virginia

times be treated less liberally than other executives on the same level when extra compensation is being passed out. For example, a number of respondents said that while they received a bonus, it was smaller than that given to other executives on their level, and only a few said it was larger. Again, some suspected that, unlike themselves, certain other executives on their level were getting in on executive stock option plans—as against a smaller number who reported the opposite.

The reason the status of personnel or industrial relations management varies so widely among companies may be, perhaps, that the scope of the department also varies greatly. The only functions delegated to it in more than 90 per cent of the companies covered by the *IRN* survey are recruitment of employees, interviewing, checking of references, and keeping employee records—this despite the fact that about 40 other functions are included among the department's responsibilities in at least some of the companies.

Opportunities to serve

A recent survey by the American Management Association indicates that the variation among departmental duties is even wider than these figures would make it appear. In the AMA survey, the only duties checked by as many as 300 out of 407 personnel departments were administration of employee benefits and some employee services.

The most fertile field for the personnel or industrial relations department desirous of increasing its importance in the next few years appears to be—at least in the viewpoint of the department managers themselves—in management development.

This, more than half those replying believed, would be the most pressing company personnel problem in the next five years. Yet only 41 per cent of the departments had management development programs in operation when the survey was taken.

Union relations—checked by the next largest number—was a poor second. Only about a fifth of the respondents thought it would be the most pressing problem in the near future. The shortage of skilled labor troubled even fewer. Very few (and none at all in the companies employing more than 6,000) were worried about community relations. END

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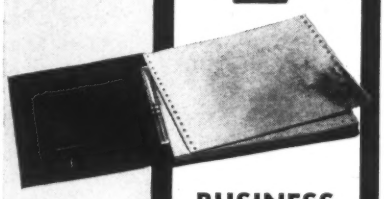

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Industry tries new financing techniques and new applications of old ones as plants are put down in preparation for the surging demand of the coming decade.

How Companies Are Paying for New Plants

WITH industry's spending for new plants on the rise, there is increased interest in specific methods for raising the wherewithal. A recent DR&MI survey of more than 100 manufacturers (80 per cent with sales over $25 million) indicates that companies are using a wide variety of financing methods to raise the roof on their new plants.

Large companies continue to rely heavily on internal sources for the funds needed for plant expansion and other major projects. About 70 per cent of all corporate financing is now derived from internal funds—retained profits and depreciation and amortization allowances—compared with about 50 per cent in the early postwar years.

Where they go for help

A survey by the National Association of Manufacturers of the financing practices in 3,500 companies shows that smaller companies, much more than large manufacturing concerns, rely for their long-term funds on loans from stockholders and friends. Smaller manufacturers turn less frequently to internal sources of funds than do the larger companies. The smaller companies, for instance, don't use insurance sources as often as big concerns.

Here are the primary sources of long-term funds and the percentage of surveyed companies that use each source:

Bank loans	33%
Insurance companies	15%
Retained earnings	15%
Mortgages	13%
Stocks and bonds	9%
Loans from stockholders and friends	7%
Other sources	8%

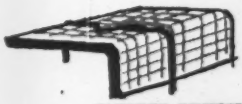
Three-fourths of the surveyed companies had fewer than 251 employees.

Borrowers' techniques

Here's a quick rundown of the specific methods that companies in the DR&MI survey are using to borrow money for new plants:

The straight real estate mortgage: This is the cheapest and simplest method of financing new plants. The most that can be borrowed is about 75 per cent of the property's value (exclusive of equipment). The mortgage usually runs fifteen to twenty years. The minimum amount that can be borrowed is frequently about $100,000, although some insurance companies set no minimum.

The borrower must agree not to pledge current assets as security for loans to pay excessive dividends. Quarterly financial statements must be provided to the lender. Net worth must be maintained, and loans to



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principals are taboo. If the borrowing company has a net worth below $1 million, life insurance on principals, payable to the lender, may be required as a condition for the loan.

The first mortgage bond issue: This enables a borrower to raise funds for the full cost of the plant building. The maximum loan is frequently 40 per cent of company's net worth. However, costs are much greater than in the straight mortgage. There are the same restrictions and covenants as with a straight mortgage, but, in addition, all the fixed assets are pledged, even those acquired during the term of the bond issue. Additional long-term debt is not permitted. Generally limited to companies with net worth exceeding $500,000, the minimum loan is frequently about $200,000.

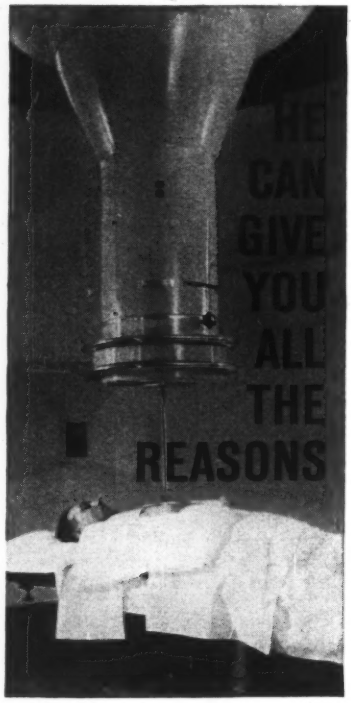
Debenture bonds or promissory notes: These are secured by loan agreement and now rank in cost between the straight mortgage and mortgage bond issue. Generally they require a net worth of approximately $4 million, although this is not a rigid rule with all lenders. In most cases the minimum loan is in the neighborhood of $500,000.

No pledge of assets is required, but the company should be at least ten years old, should be a satisfactory credit risk, and should offer good future prospects, along with a low debt ratio. These loans usually run from ten to twenty years.

Sale-and-leaseback: This is becoming increasingly important, for it provides a tailor-made plant without heavy outlay or debt by the company planning to use it. Frequently, it is unavailable unless the company has a net worth of at least $50 million. However, some insurance companies report that they make most of their sale-and-leaseback arrangements with medium-size companies.

Leaseback: pro and con

Costs are higher than for most other types of plant financing, but the tax advantages in paying rent on a long-term lease of fifteen to 30 years can make the leaseback attractive. Rental will enable the lender to recover all costs, plus about 5.5 per cent return on the unamortized portion. However, it is disadvantageous in that it ties the company to one spot for a long lease and doesn't usually provide for eventual ownership. But it releases capital for expansion of the company and does not affect its debt structure.



FOR A CHECKUP

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...AND A CHECK

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The small or medium-size companies don't usually have the same avenues of long-term financing open to them as do the larger companies. To get funds for new plants from the Small Business Administration, a manufacturer must have exhausted all private sources of financing, must provide collateral in the form of property mortgage, pay 5.5 per cent interest for a maximum period of ten years, and have a good record of past earnings and excellent future outlook. The maximum loan is $350,000. To qualify, a manufacturer generally can't have more than 250 employees or be dominant in his field.

Less help for the little guy?

But, apparently, the smaller the company, the worse are its chances of getting financial assistance from the Government. For instance, in the NAM survey, 40 per cent of the companies with 50 or fewer employees received such assistance when they requested it, compared with 80 per cent of the companies with more than 250 employees. For companies with 51 to 100 employees, the comparable percentage was 55 per cent, and this rose to 69 per cent for companies with 101 to 250 employees.

—T.K.

Beginning next month

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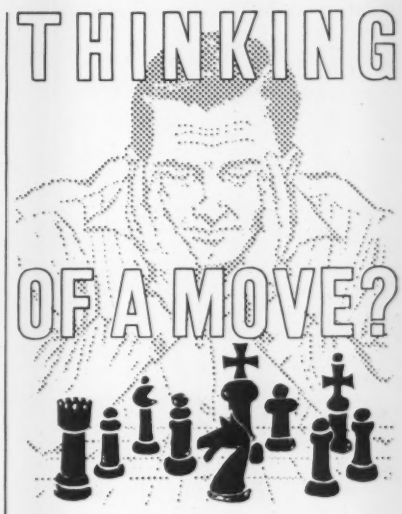
by Lawrence Stessin

Starting with the June issue, DR&MI brings you an important new monthly feature by a top industrial relations authority. Lawrence Stessin—management reporter, labor relations expert, veteran arbitrator—provides a vital, informative slant on current key trends, problems, and company programs in areas ranging from employee relations and personnel practices to grievance handling and collective bargaining strategy. Look for "Managing Your Manpower," beginning next month in DR&MI.



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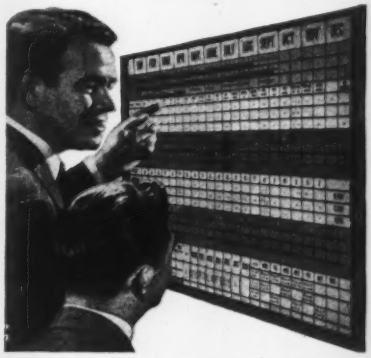

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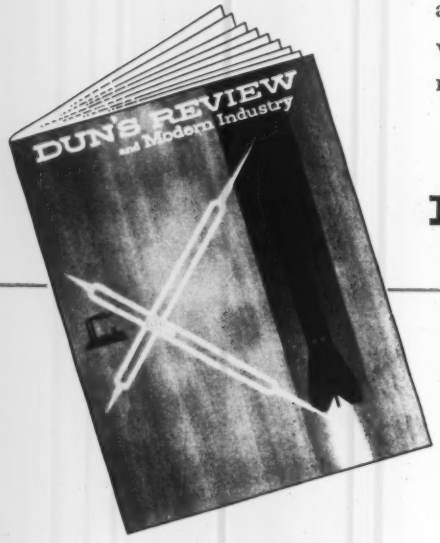

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Advertising Index

—A—

Acco Products, Division of Natser Corporation 124
La Porte & Austin, Inc.
Acme Visible Records, Inc. 70
E. H. Brown Advertising Agency
Allen, Alva, Industries 126
Cooper Advertising Agency
All-Steel Equipment, Inc. 17
Marsteller, Rickard, Gebhardt & Reed, Inc.
American Credit Indemnity Company 107
VanSant, Dugdale & Co., Inc.
American & Foreign Power Company, Inc. 86
Godwin Advertising Agency
American Motors Corp. 104
Geyer, Morey, Madden & Ballard, Inc.
American Photocopy Equipment Company ... 31, 32, 33
Irving J. Rosenbloom & Associates, Inc.
American Telephone & Telegraph Co. ..... Cover III
N. W. Ayer & Son, Inc.
Armco Drainage & Metal Products, Inc. 89
N. W. Ayer & Son, Inc.
Automatic Electric Company 38
Kudner Agency, Inc.

—B—

Baltimore Gas & Electric Company 117
Speed & Company, Inc.
Beseler, Charles, Co., The 98
Dale and Finkels Incorporated
Big Joe Manufacturing Company 29
E. H. Brown Advertising Agency
Borroughs Manufacturing Company, Subsidiary, American Metal Products Company 93
Roland G. Spedden Advertising Agency
Bunn, B. H., Co. 12
Robertson, Buckley & Gotsch, Inc.
Burns, William J., International Detective Agency, Inc., The 120
Fletcher D. Richards, Inc.
Burroughs Corporation 99
Campbell-Ewald Company
Butler Manufacturing Company 44–45
Aubrey, Finlay, Marley & Hodgson, Inc.

—C—

Cambridge Wire Cloth Company 113
Emery Advertising Corporation
Chicago Express, Inc. 36
Columbia Ribbon & Carbon Manufacturing Co., Inc. 69
E. M. Freystadt Associates, Inc.
Commercial Credit Corporation 10
VanSant, Dugdale & Co., Inc.
Commonwealth of Pennsylvania 92
Bachman, Kelly & Trautman, Inc.
Comptometer Corporation 109
MacFarland, Aveyard & Company
Consolidated Baling Company 35
Asher, Godfrey & Franklin, Inc.
Cushman Motor Works, Inc., Subsidiary, Outboard Marine Corporation 98
Ayres, Swanson and Associates, Inc.

—D—

Davidson Corporation, Subsidiary of Merganthaler Linotype Company 22
Hazard Advertising Company, Inc.
DeJur-Amsco Corporation 9
Friend-Reiss Advertising, Inc.
Desomatic Products, Inc. 124
Dictaphone Corporation 18
Young & Rubicam, Inc.
Dow Corning Corporation 84
Church and Guisewite Advertising, Inc
Duo-Fast 103
Robertson, Buckley & Gotsch, Inc.

—E—

Eastern Express, Inc. 76
Kuttner & Kuttner, Inc.
Executone, Inc. 30
The Joseph Katz Company

—F—

Fairchild Engine & Airplane Corp. 40
Gaynor & Ducas, Inc
Fastener Corporation 103
Robertson, Buckley & Gotsch, Inc.
Ford Motor Company 6
J. Walter Thompson Company

—G—

Globe Hoist Company 37
The Eldridge Company
Graphic Systems 127
Diener & Dorskind, Inc.
Gray Manufacturing Co. 26
Lawrence C. Gumbinner Advertising Agency, Inc.
Grover Co., The 77
Sales and Merchandising Counsellors

—H—

Heller, Walter E., & Company 110
Gourfain-Loeff, Inc.
Hertz Corporation 25
Needham, Louis and Brorby, Inc.
Hill, R. O. H., Inc. 126
The Buckley Organization
Houghton, E. F. & Co. 119
Beaumont, Heller & Sperling, Inc.
Hy-Test Safety Shoes, Division of International Shoe Company 88
Jos. E. Schmitt and Associates, Inc.

—I—

Ideal Cement Company 97
Rippey, Henderson, Bucknum & Co.
International Nickel Company, Inc., The 78
Marschalk and Pratt, Division of McCann-Erickson, Inc.

—K—

Kennedy Car Liner & Bag Co., Inc. 108
Poorman, Butler & Associates, Inc.
Kinnear Manufacturing Company, The 82
Wheeler, Kight & Gainey, Inc.
Kleinschmidt Division of Smith-Corona Marchant, Inc. 114
Alex T. Franz, Inc.
Koopers Company, Inc. 94
Smith, Taylor & Jenkins, Inc.

—L—

Lathem Time Recorder Co. 123
Adams-Allison Company, Division, Burke Dowling Adams, Inc.
Le Febure Corporation 21
Warren & Litzenberger
Leopold Company, The 34–35
The Biddle Company
Long Beach, Calif., Chamber of Commerce 71
Curtis, Sarver & Witzerman, Inc.
Louden Machinery Company, The 65
Kirkgasser-Drew

—M—

Magline, Inc. 116, 124
Rossi and Company
Manifold Supplies Co. 88
Williams Advertising Agency, Inc.
Marchant Calculators Division of Smith-Corona Marchant, Inc. 13
Foote, Cone & Belding
McGraw Edison Company, Voicewriter Division 43
J. Walter Thompson Company
Minnesota Mining & Manufacturing Company . Cover II
Erwin Wasey, Ruthrauff & Ryan, Inc.
Moore Business Forms 90
N. W. Ayer & Son, Inc.
Morris, Bert M., Co. 112
Gumpertz, Bentley & Dolan
Mueller Brass Co. 8
Price, Tanner & Willox, Inc.

—N—

National Steel Corporation 41
Campbell-Ewald Company
National Truck Leasing System 121
W. S. Kirkland
National Vulcanized Fibre Company 72
Harris D. McKinney, Inc.
New York Central System 42
J. Walter Thompson Company
New York Terminal Warehouse Company 121
Bruce Angus Advertising Agency

—O—

Office Products, Inc. 117
Sales and Merchandising Counsellors
Olympia Division, Inter-Continental Trading Corp. . 85
Mann-Ellis, Inc.
Oxford Filing Supply Co., Inc. 81
Kelly, Nason, Inc.

—P—

Pinkerton's National Detective Agency, Inc. 98
Gray & Rogers
Pitney-Bowes, Inc. 27
L. E. McGivena & Co., Inc.

—R—

Ransburg Electro-Coating Corp. 68
H. L. Ross Advertising
Raymond Corporation, The 105
Taylor M. Ward, Inc.
Recordak Corporation, Subsidiary of Eastman Kodak Company 14–15
J. Walter Thompson Company
Relax-A-cizor 73
W. B. Geissinger & Company, Inc.
Revolvator Company, The 16
Fredricks & Company, Inc.
Reznor Manufacturing Company 117
Kight Advertising, Inc.
Rock Island Lines 2
Aubrey, Finlay, Marley & Hodgson, Inc.
Rosicrucians, The 88
Richard Jorgensen
Ryerson, Joseph T., & Son, Inc. 4
The Buchen Company

—S—

San Bernardino County Board of Trade 127
Gage/Booth and West
Seaboard Air Line Railroad 80
The Caples Company
Shaw-Walker Company, The 28
J. Walter Thompson Company
Snell, Foster D., Inc. 20
St. George & Keyes, Inc.
Southern New Jersey Development Council 130
The Cowan Advertising Agency

—T—

Technical Service, Inc. 102
Holden, Chapin, LaRue Inc.
Tel-A-Story, Inc. 35
Warren & Litzenberger
Temprite Products Corp. 118
Watkins-Rogers Inc.
Texas Company, The ..... Cover IV
G. M. Basford Company
Texas Power and Light Company 26
Don L. Baxter, Inc.
Time, Inc. 87
Young & Rubicam, Inc.

—U—

Underwood Corporation 75
William Esty Company
Union Steel Products Co. 19
Rumsey & Associates
United States Steel Corporation 11, 100
Batten, Barton, Durstine & Osborn, Inc.
Virginia Electric and Power Company 39
Cargill, Wilson & Acree, Inc.
VISIrecord, Inc. 125
McClellan Advertising, Inc.

—W—

Wagner Electric Corporation 84
Arthur R. Mogge, Inc.
Wassell Organization, Inc. 84
James R. Flanagan Advertising Agency
Watson Manufacturing Co. 122
Griffith & Rowland
Wayne Manufacturing Company 24
L. J. Swain
Western Electric Company 46
Cunningham & Walsh, Inc.
Western Union Telegraph Co., The 66–67
Benton & Bowles, Inc.
West Virginia Industrial & Publicity Commission ... 124
Advertising, Inc.

—Y—

Yoder Company, The 7
G. M. Basford Company

ADVERTISING SALES STAFF

EAST:

New York 8, 99 Church St., DIgby 9-3300 ..... George Maturniak, Jack Phillips, Bert Berne, Ray Huhta
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Pyramids and People

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The Art of Intelligent Giving

Giving is almost as difficult an assignment as getting for big corporations that are asked to contribute to educational and charitable appeals. Larger companies use the talents of experts to screen requests for aid—a task which calls for a proper balance of realism and sympathetic understanding. Soliciting gifts has also become the art of highly skilled professionals who know where to go for money, how much to ask, and how to use tested blandishments to loosen company purse strings.

Corporate philanthropy ranges from the sporadic, haphazard, and often highly personal charities of smaller companies to the methodically planned programs of larger corporations which have a schedule for screening, interviewing, and approving gift applications. According to the experts, indiscriminate giving is worse than no giving at all, because it encourages those marginal charities in which the bulk of proceeds is absorbed by "administrative expenses." But good judgment is not limited to avoiding fraudulent appeals, the experts warn. A company must choose even among the worthy causes, considering the relative merits of various schools and colleges, the varying social demands of the mentally ill, the alcoholic, the delinquent, and the urgency of appeals from agencies devoted to many areas of medical research.

In the June issue, DR&MI will review the tactics of the applicants and the techniques of donors in company charity programs.

Back from Decentralization

If ever a trend shifted rapidly into reverse, it was the decentralization of management controls in many larger companies with a horizontal spread of products and services. Too many plant managers, suddenly put on their own in vaguely defined areas of responsibility, were paralyzed into a mental freeze, while others were galvanized into taking unwarranted risks. In most cases, remote control resulted in lack of intercompany communication, with a breakdown in sales, purchasing, and distribution economies.

The recent recession caused top management to yank on the reins and pull some galloping branch operators back on their haunches. The fault was not so much with the plant executives as with the lack of a rule book to guide their judgment where product lines, research programs, or distribution changes were concerned.

In the July issue, Edward McCreary will describe how some important companies are reverting to centralized controls and explain the pertinent reasons behind the shift.

—A. M. S.

New Bell System intercom puts these advantages

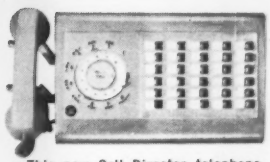
at your finger tips...

You can talk to others in your office, plant or store, just by pushing a button or dialing.
You can add another person to an outside call, then stay on the line or get off, as you like.
You can confer with up to 6 persons at once by touching a button or turning the dial.
You can handle outside and intercom calls on one phone. No extra equipment on desk.

These are some of the new features of the Bell System's modern, push-button intercom service. Here is telephone service tailored to the exact needs of your business—to help you cut costs, increase profits and improve customer service.

No capital investment required. Rearrangements and additions are handled by skilled Bell System technicians. No added cost for maintenance.

Find out how this new intercom service can speed *your* business by improving your communications. Call your Bell Telephone business office and ask for a representative to visit you at your convenience. No obligation, of course.



This new Call Director telephone provides as many as 30 push-buttons for maximum use of intercom service features.

BELL TELEPHONE SYSTEM

Good bet: You're paying for lubricants you don't need

Does this case sound familiar to you?

A midwest firm was buying lubricants on the recommendation of every department head, foreman or even operator. Inventory — often duplicated — was scattered all over the plant, yet shortages in one spot were never related to overstocks in another. The result: costly overstocking, extra handling, increased dangers of misapplication.

Management then instituted an Organized Lubrication Plan. Now they use 20 lubes instead of 97, have cut their purchase orders from 300 to 12 per year. Direct savings are estimated at thousands of dollars annually.

Can Organized Lubrication save money in your plant? Contact your local Texaco Engineer or write for "Management Practices that Control Costs via Organized Lubrication." The Texas Company, 135 East 42nd Street, New York 17, N. Y., Dept. D-82.

LUBRICATION IS A MAJOR FACTOR IN COST CONTROL